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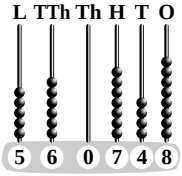
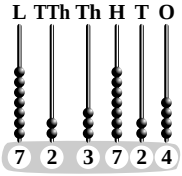
NEP 2020

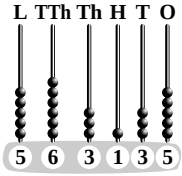
MATHEMATICS

Teacher's Manual
(Class 4 to 5)

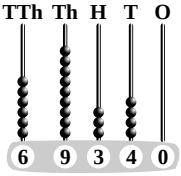
- Learning Tips
- Maths Lab Activity
- Model Test Paper
- MCQs

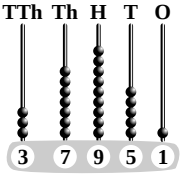
d. 

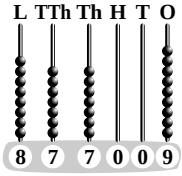
e. 

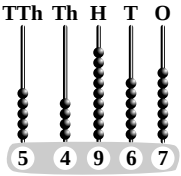
f. 

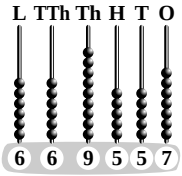
4. Show the following numbers on the abacus :

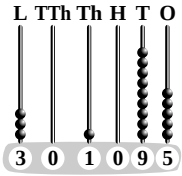
Ans. a. 

b. 

c. 

d. 

e. 

f. 

Project

Find the area of following Countries of India in kilometres and then write in words.

Ans. Do it yourself.

Comparison of Indian and International System

1. Find :

Ans. a. 100 b. 10000 c. 10 d. 10

2. Write numerals for the following number names :

Ans. a. 5,03,102 b. 54,267

c. 9,000,028 d. 2,037,526

3. Arrange the following numbers in International place value chart :

Periods	Millions			Thousands			Ones		
Place Value	Hundred Millions	Ten Millions	Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones
Short form	HM	TM	M	HTh	TTh	Th	H	T	O

34569					3	4	5	6	9
437500				4	3	7	5	0	0
896301				8	9	6	3	0	1
900975				9	0	0	9	7	5

4. Group the numbers by putting commas as per the International Number System and write their number names:

Ans. a. 50249 — Fifty thousand two hundred forty-nine.

b. 23,471 — Twenty three thousand four hundred seventy-one

c. 543,486 — Five hundred forty-three thousand four hundred eighty-six.

d. 998, 916 — Nine hundred ninety-eight thousand nine hundred sixteen.

e. 4, 819, 675 — Four million eight hundred nineteen thousand six hundred seventy-five.

f. 820, 796 — Eight hundred twenty thousand seven hundred fifty-six.

g. 375,558 — Three hundred seventy-five thousand five hundred fifty-eight.

h. 9,087, 501 — Nine million eighty-seven thousand five hundred one.

Exercise 1 (c)

1. Find the place value and face value of the coloured digit in the given numbers :

	Numbers	**Place Value**	**Face Value**
Ans. a.	51,417	**50000**	**5**
b.	56,046	**000**	**0**
c.	29,791	**700**	**7**
d.	8,63,518	**500**	**5**
e.	1,24,713	**20000**	**2**
f.	67,425	**60000**	**6**
g.	4,59,518	**8**	**8**
h.	7,29,918	**9000**	**9**

2. Write the expanded form of the following numbers :

Ans. a. 49,125 = **40000 + 9000 + 100 + 20 + 5**

b. 75,805 = **70000 + 5000 + 800 + 0 + 5**
c. 92,234 = **90000 + 2000 + 200 + 30 + 4**
d. 6,75,173 = **600000 + 70000 + 5000 + 100 + 70 + 3**
e. 3,47,785 = **300000 + 40000 + 7000 + 700 + 80 + 5**
f. 9,37,357 = **900000 + 30000 + 7000 + 300 + 50 + 7**

3. Write the short form of the following numbers :

Ans. a. 45060 b. 65487 c. 32176
d. 306077 e. 400444 f. 990999

4. Write the successor of the following :

Ans. a. 23,046 b. 3,29,668 c. 38,276 d. 34,701

5. Write the predecessor of the following :

Ans. a. 42,097 b. 2,99,999 c. 54,320 d. 6,50,086

Comparing Numbers

Exercise 1 (d)

1. Compare each pair of numbers. Put >, < or = in the ☐ .

Ans. a. 64,371 < 64,392 b. 52,428 < 53,925
c. 69,370 = 69,370 d. 47,478 > 47,378
e. 7,28,179 > 4,28,179 f. 4,38,798 < 4,48,790

2. Arrange in ascending order.

Ans. a. 27,280; 27,820; 27,028; 27,082
b. 4,06,219; 5,31,325; 6,15,104; 6,25,041
c. 4,28,312; 6,28,470; 7,17,617; 8,17,518

3. Arrange in descending order.

Ans. a. 63,007; 62,950; 62,590; 62,509
b. 9,51,121; 9,01,246; 8,31,415; 8,13,306
c. 9,71,823; 9,43,126; 9,17,338; 9,17,238

Forming Largest and Smallest numbers

Exercise 1 (e)

1. Write the smallest and greatest number using each of the following digits only once.

Ans. a. 2, 1, 5, 9, 8 Smallest **12589** Greatest **98521**
b. 9, 7, 4, 2, 8 Smallest **24789** Greatest **98742**
c. 9, 7, 0, 1, 3, 2 Smallest **102379** Greatest **973210**

d. 2, 8, 0, 7, 0, 4 Smallest **200478** Greatest **874200**

2. Form the smallest 6-digit number using the digits 1, 3, 0, 5, 7 and 6 only once.

Ans. 103567

3. Round off to the nearest 10.

Ans. a. **6291** The digit at ones place 1 < 5,
So, 6291 is rounded off to 6290.

b. **35876** The digit at ones place 6 > 5,
So, 35876 is rounded off to 35880.

c. **5746** The digit at ones place 6 > 5,
So, 5746 is rounded off to 5750.

d. **4375** The digit at ones place 5 = 5,
So, 4375 is rounded off to 4380.

e. **77475** The digit at ones place 5 = 5,
So, 77475 is rounded off to 77480.

f. **98335** The digit at ones place 5 = 5,
So, 98335 is rounded off to 98340.

4. Round off to the nearest hundreds.

Ans. a. **1185** The digit at tens place 8 > 5,
So, 1185 is rounded off to 1200.

b. **7199** The digit at tens place 9 > 5,
So, 7199 is rounded off to 7200.

c. **6253** The digit at tens place 5 = 5,
So, 6253 is rounded off to 6300.

d. **9830** The digit at tens place 3 < 5,
So, 9830 is rounded off to 9800.

e. **18997** The digit at tens place 9 > 5,
So, 18997 is rounded off to 19000.

f. **8899** The digit at tens place 9 > 5,
So, 8899 is rounded off to 8900.

5. Round off the numbers to the nearest 1000.

Ans. a. **4851** The digit at hundred place 8 > 5,
So, 4851 is rounded off to 5000.

b. **1086** The digit at hundred place 0 < 5,
So, 1086 is rounded off to 1000.

c. **9999** The digit at hundred place 9 > 5,

So, 9999 is rounded off to 10000.

d. **3251** The digit at hundred place 2 < 5,
So, 3251 is rounded off to 3000.

e. **19731** The digit at hundred place 7 > 5,
So, 19731 is rounded off to 20000.

f. **20518** The digit at hundred place 5 = 5,
So, 20518 is rounded off to 21000.

g. **13569** The digit at hundred place 5 = 5
So, 13569 is rounded off to 17000.

h. **49476** The digit at hundred place 4 < 5
So 49476 is rounded off to 49000.

i. **2096** The digit at hundred place o > 5
So 2096 is rounded off to 2000.

MCQs

Choose the correct option.

Ans. 1. a 2. c 3. b 4. c

Fund with Maths

Solve the cross word puzzle :

Ans.

1. 4	5	6	2. 8	7		3. 9	9
0			7			9	4. 1
5. 6	3	2	0	5		9	0
8			6. 6	5	4	9	0
7. 9	9	8	7	0		9	0
8. 9	0	0	0	0		9	0

Chapter

2 Roman Numerals

Exercise 2 (a)

1. Write the following in Roman numerals.

Ans. a. LX b. XCII c. XLVII
d. CXL e. CCLXXXVIII f. CDLXXV

g. CDIV h. CMXCVI

2. Write the following in Hindu-Arabic numerals.

Ans. a. 46 b. 95 c. 29 d. 331 e. 66
f. 61 g. 93 h. 976 i. 83 j. 701

3. Write true (T) or false (F).

Ans. a. F b. T c. T d. F e. T

HOTS

1. Write >, < or = :

Ans. a. XXI + III > XXIII b. L ÷ V = X
c. 83 > LXXX d. LXII – II < LXIV
e. XLV > LX f. VII × IV < XXX

MCQs

Choose the correct option.

Ans. 1. a 2. c 3. b 4. c

Fun with Maths

Who was the first president of India?

Ans.

IV	IX	XX-XII	VI-III	II	XII-III	XCII	X+1	XXVII ÷ III	XXXIII÷III	XXV	XL-XXIII	L÷XXV	XXIII×IV	XLV
4	9	8	9	2	9	92	11	9	11	25	17	2	92	45
J	A	W	A	H	A	R	L	A	L	N	E	H	R	U

J	A	W	A	H	A	R	L	A	L

N	E	H	R	U

Chapter

3 Addition and Subtraction

Addition of 5 and 6-digit Numbers (Without Carrying)

Exercise 3 (a)

1. Add :

Ans. a.

	TTh	Th	H	T	O
	4	2	4	2	1
+	1	7	3	5	2
	5	9	7	7	3

b.

	TTh	Th	H	T	O
	4	3	5	0	5
+	4	5	4	3	0
	8	7	9	3	5

c.

	TTh	Th	H	T	O
	5	3	0	6	0
+	3	4	8	3	6
	8	7	8	9	6

d.

	TTh	Th	H	T	O
	1	3	3	5	5
	2	2	4	2	1
+	4	1	0	0	2
	7	6	7	7	8

e.

	TTh	Th	H	T	O
	5	0	2	4	3
	1	5	3	2	1
+	2	3	0	2	4
	8	8	5	8	8

f.

	TTh	Th	H	T	O
	5	0	2	4	3
	1	5	3	2	1
+	2	3	0	2	4
	8	8	5	8	8

g.

	L	TTh	Th	H	T	O
	1	1	1	1		
	1	0	5	0	3	2
	2	6	7	9	1	4
+	3	1	0	5	7	8
	6	8	3	5	2	4

h.

	L	TTh	Th	H	T	O
	1	1	1	1		
	2	7	5	0	6	1
	2	4	2	5	0	1
	3	4	9	9	8	7
+	8	6	7	5	4	9
	8	6	7	5	4	9

2. Find the sums :

Ans. a.

	TTh	Th	H	T	O
	1	3	3	5	5
	2	2	4	2	1
+	4	1	0	0	2
	7	6	7	7	8

b.

	L	TTh	Th	H	T	O
		2	3	2	0	1
+	3	6	1	2	2	2
	3	8	4	4	2	3

c.

	L	TTh	Th	H	T	O
		1	2	3	4	5
	2	1	4	3	1	2
+		0	1	0	2	2
	2	2	7	6	7	9

d.

	L	TTh	Th	H	T	O
	4	3	7	1	0	5
	1	4	1	4	1	0
+		2	0	0	1	5
	5	9	8	5	3	0

e.

	L	TTh	Th	H	T	O
	1	0	3	2	6	4
	2	0	0	5	1	3
+	3	8	6	1	0	1
	6	8	9	8	7	8

f.

	L	TTh	Th	H	T	O
	2	0	1	2	3	4
	3	1	2	3	4	5
+	1	2	3	4	1	0
	6	3	6	9	8	9

3. Fill in the blanks.

Ans. a.

	1	8	4	7	5
+	④	0	④	②	3
	5	⑧	8	9	⑧

b.

	④	3	3	②	4	④
+	5	⑤	3	4	③	1
	9	8	⑥	6	7	5

Mental Maths

The corner numbers add up to the number in the centre. Fill in the missing numbers.

Ans. a.

6926 3600
15500
4590 384

b.

1260 4520
11430
3500 2150

Addition on 5 and 6-digit Numbers (With carrying)

Exercise 3 (b)

1. Add.

Ans. a.

	L	TTh	Th	H	T	O
		1			1	
	2	1	2	3	6	5
+	6	3	9	5	1	5
	8	5	1	8	8	0

b.

	L	TTh	Th	H	T	O
		1		1	1	
		1	7	3	4	7
+		2	6	2	7	5
		4	3	6	2	2

c.

	L	TTh	Th	H	T	O
		1	1			
		1	6	9	3	3
+		2	4	3	0	6
		7	1	2	3	9

d.

	L	TTh	Th	H	T	O
		1	1	1	1	
	5	1	9	4	7	2
	2	1	6	3	2	8
+		1	4	5	1	8
	7	5	0	3	1	8

e.

	L	TTh	Th	H	T	O
	1	0	2	3	1	4
	2	1	2	4	4	1
+	3	2	5	0	2	1
	6	3	9	7	7	6

f.

	L	TTh	Th	H	T	O
	2	3	7	0	9	4
	1	2	2	4	0	1
+		1	0	3	0	1
	3	6	9	7	9	6

g.

	L	TTh	Th	H	T	O
	1	2	2	1	1	
	4	4	8	4	9	8
	3	1	2	7	0	2
		2	8	3	0	1
+		1	6	7	0	3
	8	0	6	2	0	4

h.

	L	TTh	Th	H	T	O
		6	4	9	9	6
	2	3	3	8	0	5
			2	6	4	5
+	3	1	2	0	0	0
	6	1	3	4	4	6

2. Solve the following :

Ans. a.

	TTh	Th	H	T	O
			1	1	
	2	0	4	9	6
+	3	4	0	6	4
	5	4	5	6	0

b.

	TTh	Th	H	T	O
	1		1	1	
	6	3	2	5	4
+	2	9	0	4	6
	9	2	3	0	0

c.

	L	TTh	Th	H	T	O
		1		1		
	5	3	8	4	9	5
+		5	6	4	3	4
	5	9	4	9	2	9

d.

	TTh	Th	H	T	O
	1	2	1	1	
	2	1	9	8	7
		1	8	3	2
+	5	9	9	0	9
	8	3	7	2	8

e.

	TTh	Th	H	T	O
	1	1	2	2	
		3	7	8	5
			1	0	8
		4	7	8	9
+	1	5	0	6	4
	2	3	7	4	6

f.

	L	TTh	Th	H	T	O
		1	1	1	1	
	5	2	6	5	3	2
		3	2	0	6	4
+	1	2	2	5	6	5
	6	8	1	1	6	1

g.

	TTh	Th	H	T	O
	2		3	2	
	3	8	0	3	2
	1	9	2	8	0
		4	0	8	9
+			1	9	9
	6	1	6	0	0

h.

	L	TTh	Th	H	T	O
	1	1			1	
	4	3	8	1	0	2
		4	3	3	2	4
+	2	5	4	1	2	6
	7	3	5	5	5	2

Properties of Addition

1. Fill in the blanks :

Ans. a. 5031 + 1112 = **1112** + 5031 b. 4321 + **7141** = 7141 + 4321

c. 4333 + 2089 = 2089 + **4333**

d. 1216 + 2420 + 185 = 2420 + **185** + 1216

e. (320 + 3196) + 99 = 3196 + (320 + **99**)

f. 1449 + 326 + **7110** = 326 + 7110 + 1449

g. 37541 + **0** = 37541

2. Name of the property :

Ans. a. Zero property of addition

b. Commutative property of addition
c. Associative property of addition

Subtraction of 5 and 6-digit numbers (Without Carrying)

Exercise 3 (d)

1. Subtract :

Ans. a.

	TTh	Th	H	T	O
	5	8	3	8	7
–	3	3	2	6	4
	2	1	1	2	3

b.

	TTh	Th	H	T	O
	6	4	6	7	9
–	6	3	5	6	9
		1	1	1	0

c.

	L	TTh	Th	H	T	O
	8	6	4	8	9	5
–	3	3	4	2	1	5
	4	3	0	6	8	6

d.

	L	TTh	Th	H	T	O
	6	7	6	6	9	8
–	3	4	3	5	3	4
	3	3	3	1	6	4

e.

	L	TTh	Th	H	T	O
	7	6	6	4	3	8
–	4	4	3	3	2	1
	3	2	3	1	1	7

f.

	L	TTh	Th	H	T	O
	4	9	7	6	9	9
–	3	8	6	5	9	9
	1	1	1	1	0	0

2. Find the difference :

Ans. a.

	TTh	Th	H	T	O
	9	6	7	8	7
–	8	6	4	3	7
	1	0	3	5	0

b.

	TTh	Th	H	T	O
	6	4	6	7	9
–	6	3	5	6	9
		1	1	1	0

c.

	L	TTh	Th	H	T	O
	9	6	4	8	9	6
–	5	3	4	2	1	0
	4	3	0	6	8	6

d.

	L	TTh	Th	H	T	O
	6	7	6	6	9	8
–	3	4	3	5	3	4
	3	3	3	1	6	4

e.

	L	TTh	Th	H	T	O
	7	6	6	4	3	8
–	4	4	3	3	2	1
	3	2	3	1	1	7

f.

	L	TTh	Th	H	T	O
	4	9	7	6	9	9
–	3	8	6	5	9	9
	1	1	1	1	0	0

HOTS

Find the missing digit.

Ans. 1.

	7	④	9	2	5
–	⑤	1	⓪	8	4
	2	3	8	4	1

2.

	9	8	①	4	2	0
–	2	④	5	①	9	4
	⑦	3	6	2	②	6

Exercise 3 (e)

1. Subtract :

Ans. a.

	TTh	Th	H	T	O
		5	9	19	
	7	6	0	0	0
–	3	4	3	2	0
	4	1	6	8	0

b.

	TTh	Th	H	T	O
		7	14	13	15
	4	8	5	4	5
–	3	3	5	6	6
	1	4	9	7	9

c.

	L	TTh	Th	H	T	O
		0	10	8	12	12
	9	1	0	9	3	2
–	6	0	8	7	8	3
	3	0	2	1	4	9

d.

	L	TTh	Th	H	T	O
			7	13	16	10
	8	5	8	4	7	0
–	6	0	1	9	8	3
	2	5	6	4	8	7

e.

	L	TTh	Th	H	T	O
	3	12	12		4	10
	4	3	2	6	5	0
–	1	7	5	3	4	4
	2	5	7	3	0	6

f.

	L	TTh	Th	H	T	O
		3	13	5	16	13
	6	4	3	6	7	3
–	3	1	9	5	8	8
	3	2	4	0	8	5

g.

	L	TTh	Th	H	T	O
		5	9	10	7	15
	7	6	0	0	8	5
–	4	2	5	1	7	8
	3	3	4	9	0	7

h.

	L	TTh	Th	H	T	O
	5	9	9	15	10	10
	6	0	0	6	1	0
–	2	9	1	7	8	4
	3	0	8	8	2	6

i.

	L	TTh	Th	H	T	O
	5	17	16	9	9	13
	6	8	7	0	0	3
–	2	9	9	4	6	5
	3	8	7	5	3	8

2. Find the difference and check your answer :

Ans. a.

	4	8	3	6	9
–	1	5	4	6	7
	3	2	9	0	2

Check

	3	2	9	0	2
+	1	5	4	6	7
	4	8	3	6	9

b.

	9	6	2	3	9
–	7	0	2	9	3
	2	5	9	4	6

Check

	2	5	9	4	6
+	7	0	2	9	3
	9	6	2	3	9

c.

	8	5	1	0	6
–	3	7	2	5	4
	4	7	8	5	2

Check

	4	7	8	5	2
+	3	7	2	5	4
	8	5	1	0	6

d.

	6	1	5	8	2	4
–	3	3	7	4	6	9
	2	7	8	3	5	5

Check

	2	7	8	3	5	5
+	3	3	7	4	6	9
	6	1	5	8	2	4

e.

	8	0	6	7	0	4
–	2	5	9	3	7	0
	5	4	7	3	3	4

Check

	5	4	7	3	3	4
+	2	5	9	3	7	0
	8	0	6	7	0	4

f.

	8	0	0	0	0	0
–	3	4	9	7	3	0
	4	5	0	2	7	0

Check

	4	5	0	2	7	0
+	3	4	9	7	3	0
	8	0	0	0	0	0

g.

	9	6	0	0	8	5
–	6	2	5	1	7	8
	3	3	4	9	0	7

Check

	3	3	4	9	0	7
+	6	2	5	1	7	8
	9	6	0	0	8	5

h.

	7	0	0	0	0	0		1	0	1	2	3	5
–	5	9	8	7	6	5	+	5	9	8	7	6	5
	1	0	1	2	3	5		7	0	0	0	0	0

Check

3. Fill in the boxes.

Ans. a. 41,593 – 0 = **41593** b. 78,921 – **78,921** = 0

c. 36,310 – **0** = 36310 d. 3,41,275 – **3,41,275** = 0

e. 45390 – **1** = 45389 f. 10000 – 1 = **9999**

Addition and Subtraction Together

Exercise 3 (f)

1. Solve the following :

Ans. a. **75,322 – 52,600 + 50000**

= 75322 + 50000 – 52600 = 125322 – 52600

= **72722**

b. **97,115 + 31,521 – 20,872**

= 128636 – 20872 = **107764**

c. **56,752 – 14132 + 21531**

= 56,752 + 21531 – 14132

= 72283 – 14132 = **64151**

d. **3,45,632 + 21,569 – 12000**

= 367201 – 12000 = **355201**

e. **8,51,265 – 2,14,321 + 1,26,000**

= 8,51,265 + 1,26,000 – 2,14,321

= 9,77,265 – 2,14,321 = **7,62,944**

f. **8000 – 75,934 + 1,60,756**

= 8000 + 1,60,756 – 75,934

= 1,68,756 – 75,934

= **92,822**

Word Problems

Exercise 3 (g)

2.

Lock were produced in February	=	14,705
Lock were produced in March	=	26,020
Lock were produced in April	=	+ 30,750
Total locks produced		**71,475**

So, 71,475 locks were produced in 3 months.

2. Lock were produced in February= 14,705

Lock were produced in March	=	26,020
Lock were produced in April	=	+ 30,750
Total locks produced		**71,475**

So, 71,475 locks were produced in 3 months.

3.

Prize of laptop and car	=	` 5,50,000
Cost of laptop	=	– ` 83,754
\ Cost of car	=	` **4,66,246**

So, He mant had to pay `466246 for car.

4.

No. of apples in orchard	=	55,990
Sold apples	=	– 17,897
So unsold apples	=	**38,093**

So, 38,093 apple are left.

5.

Mr. Singh's annual income in 2011	=	` 4,42,970
Annual increment	=	+ ` 3,00,550
His income in 2012	=	` **7,43,520**

So, His income in 2012 is `743520.

6.

Quantity of flour	=	8,54,090 kg
Quantity of Sugar	=	6,23,479 kg
More flour than sugar in the godown	=	**2,30,611** kg

So, There was 2,30,611 kg flour extra than the sugar.

7.

A shopkeeper carved in first month	=	` 6,000
A shopkeeper carved in second month	=	` 10,252
A shopkeeper carved in third month	=	` 9,278
He earned in money in all	=	` **25,530**

\ He earned `25,530 in all.

8.

Mr. kumar bought a printed for	=	` 10,350
Mr. kumar bought a Notepad for	=	+ ` 28,755
Total money required	=	` **39,105**
Mr. Kumar sold his old computer for	=	– ` 6200
Left money he has to pay	=	` **32,905**

So, He payed `32,905 finally.

9. No. of men in a village = 38,272
No. of women in a village = + 33,923
= **72,195**

Total population of the village = 90,743
So, No. of children in a village = – 72,195
= **18,548**

Hence, the number of children is 18548 in the village.

10. Aashi covered by her car in first year = 15,769 km
She covered by her cr in second year = 12,520 km
She covered by her car in three years = + 16,485 km
Total distance covered by car in three years = **44,774 km**

So, Aashi covered 44, 774 km by hear car in the three years.

11. No of people watch English T.V. Programmes = 12,725
No of people watch Hindi T.V. Programmes = 2,15,600
Total No of people watch English and Hindi T.V. Programmes = 12,725 + 2,15,600
= 2,28,325
No. of Rest people watch bengal T.V. p = 3,56,700 – 2,28,325
= **1,28,375**

So 1,28,375 people watch Bengali T.V. Programmes

MCQs

Choose the correct option.

Ans. 1. a 2. a 3. b 4. a 5. b 6. a

Fun with Maths

Look at the table and answer the following questions.

Ans. a. Sachin Tendulkar b. 7063 runs c. 13497 runs
d. 10612 runs e. 56990 runs

Chapter

4 Multiplication

Properties of Multiplication

Mental maths

Fill in the blanks.

Ans. 1. 15 × 1 = **15** 2. 4 × **0** × 5 = 0 3. 27 × **1** = 27
4. **16** × 1 = 16 5. 1 × **1** = 1 6. 0 × 0 = **0**
7. 14 × 0 = **0** 8. (3 × 4) × 2 = (2 × 3) × **4**
9. 1 × 33 = **33** 10. 16 × **0** = 0 11. 15 × 8 = 8 × **15**
12. 6 × 5 × **9** = 9 × 6 × **5**

Exercise 4 (a)

1. Fill in the blanks :

Ans. a. 40 × **1000** = 40,000
b. 1321 × 0 = **0**
c. 699 × 1 = **699**
d. 569 × 257 × 141 = 141 × 257 = **569**
e. (79 × **456**) × 145 = **145** × 456 × 79
f. (34 × 2) × 4 = **2** × 4 (4 × 34)

2. Find the product :

Ans. a.

H	T	O
1	6	7
	×	6
1	0	0 2

b.

H	T	O
2	8	3
	×	5
1	4	1 5

c.

H	T	O
3	0	8
	×	7
2	1	5 6

d.

H	T	O
2	3	6
	×	4
9	4	4

e.

Th	H	T	O
1	3	0	8
		×	6
7	8	4	8

f.

Th	H	T	O
4	6	5	3
		×	4
1	8	6	1 2

g.

Th	H	T	O
2	3	6	5
		×	3
7	0	9	5

h.

Th	H	T	O
1	2	3	4
		×	8
9	8	7	2

3. Find the product :

Ans. a.

Th	H	T	O
2	4	6	0
		×	3
7	3	8	0

b.

Th	H	T	O
1	4	3	2
		×	5
7	1	6	0

c.

Th	H	T	O
2	7	8	9
		×	2
5	5	7	8

d.

Th	H	T	O
1	9	8	3
		×	8
1	5	8	6 4

e.

Th	H	T	O
2	4	6	0
		×	3
5	8	8	0

f.

Th	H	T	O
4	7	6	5
		×	4
1 9	0	6	0

g.

Th	H	T	O
1	4	7	9
		×	7
1 0	3	5	3

h.

Th	H	T	O
9	3	4	6
		×	2
1 8	6	9	2

Multiplication by a 2-digit Number

Exercise 4 (b)

1. Multiply.

Ans. a.

Th	H	T	O
	1	2	5
	×	3	2
	2	5	0
3	7	5	×
4	0	0	0

b.

TTh	Th	H	T	O
		3	7	5
		×	4	3
	1	1	2	5
1	5	0	0	×
1	6	1	2	5

c.

TTh	Th	H	T	O
	1	4	5	2
		×	1	8
1	1	6	1	6
1	4	5	2	×
2	6	1	3	6

2. Find the product.

Ans. a.

Th	H	T	O
	1	2	8
	×	3	2
	2	5	6
3	8	4	×
4	0	9	6

b.

TTh	Th	H	T	O
		6	4	3
		×	1	8
	5	1	4	4
	6	4	3	×
1	1	5	7	4

c.

Th	H	T	O
	1	3	6
	×	4	9
1	2	2	4
5	4	4	×
6	6	6	4

d.

TTh	Th	H	T	O
		4	0	7
		×	3	5
	2	0	3	5
1	2	2	1	×
1	4	2	4	5

e.

TTh	Th	H	T	O
	1	2	3	4
		×	4	8
	9	8	7	2
4	9	3	6	×
5	9	2	3	2

f.

TTh	Th	H	T	O
	2	0	5	6
		×	2	2
	4	1	1	2
4	1	1	2	×
4	5	2	3	2

g.

TTh	Th	H	T	O
	1	3	9	5
		×	6	4
	5	5	8	0
8	3	7	0	×
8	9	2	8	0

h.

TTh	Th	H	T	O
	1	5	3	9
		×	2	6
	9	2	3	4
3	0	7	8	×
4	0	0	1	4

i.

L	TTh	Th	H	T	O
		3	0	8	7
			×	3	7
	2	1	6	0	9
	9	2	6	1	×
1	1	4	2	1	9

Multiplication by 3-digit Number

Exercise 4 (c)

1. Find the product.

Ans. a. **325 × 400**
325 × 4 × 100
1300 × 100
13000

b. **375 × 400**
375 × 4 × 100
1500 × 100
150000

c. **513 × 500**
513 × 5 × 100
2565 × 100
256500

d. **106 × 300**
106 × 3 × 100
318 × 100
31800

e. **1895 × 100**
189500

f. **3105 × 200**
3105 × 2 × 100
6210 × 100
621000

2. Find the product.

Ans. a.

L	TTh	Th	H	T	O
			8	0	9
		×	3	1	2
		1	6	1	8
		8	0	9	×
2	4	2	7	×	×
2	5	2	4	0	8

b.

TTh	Th	H	T	O
	4	7	3	
×	2	0	8	
3	7	8	4	
0	0	0	×	
9	4	6	×	×
9	8	3	8	4

c.

L	TTh	Th	H	T	O
			6	0	6
		×	4	4	0
			0	0	0
	2	4	2	4	×
2	4	2	4	×	×
2	6	6	6	4	0

d.

L	TTh	Th	H	T	O
			3	8	6
		×	3	0	5
			7	7	2
		0	0	0	×
1	1	5	8	×	×
1	1	6	5	7	2

e.

L	TTh	Th	H	T	O
			4	2	9
		×	2	4	6
		2	5	7	4
	1	7	1	6	×
	8	5	8	×	×
1	0	5	5	3	4

f.

TTh	Th	H	T	O
	5	1	6	
×	1	7	0	
	0	0	0	
3	6	1	2	×
5	1	6	×	×
8	7	7	2	0

g.

L	TTh	Th	H	T	O
		1	6	1	5
		×	3	0	1
		1	6	1	5
	0	0	0	0	×
4	8	7	5	×	×
4	8	6	1	1	5

h.

L	TTh	Th	H	T	O
		1	6	2	9
		×	2	1	4
		6	5	1	6
	1	6	2	9	×
3	2	5	8	×	×
3	4	8	6	0	6

i.

L	TTh	Th	H	T	O
		1	3	6	3
		×	5	4	3
		4	0	8	9
	5	4	5	2	×
6	8	1	5	×	×
7	4	0	1	0	9

j.

L	TTh	Th	H	T	O
		1	3	1	8
		×	2	0	7
		9	2	2	6
	0	0	0	0	×
2	6	3	6	×	×
2	7	2	8	2	6

k.

L	TTh	Th	H	T	O
		3	2	5	7
		×	1	8	1
		3	2	5	7
2	6	0	5	6	×
3	2	5	7	×	×
5	8	9	5	1	7

l.

L	TTh	Th	H	T	O
		2	7	9	5
		×	2	4	4
	1	1	1	8	0
1	1	1	8	0	×
5	5	9	0	×	×
6	8	1	9	8	0

1. Tick (3) the correct answer :

Ans.

a.	64 × 10 =	i. 604		ii. 640	3	iii. 6400	
b.	89 × 100 =	i. 8900	3	ii. 890		iii. 89000	
c.	50 × 1000 =	i. 50000	3	ii. 5000		iii. 500	
d.	50 × 10 =	i. 100		ii. 1000	3	iii. 500	

2. Fill in the blanks :

Ans.

a. 53 × 200 = **10600**
b. 48 × 60 = **2880**
c. 129 × 400 = **51600**
d. 96 × 4000 = **384000**
e. 364 × 700 = **254800**
f. 65 × 7000 = **455000**
g. 46 × 200 = **19200**
h. 357 × 600 = **214200**
i. 76 × 200 = **7600**

Estimation in Multiplication

Exercise 4 (e)

1. Round each factor with more than one digit to the nearest ten. Then estimate the product.

Ans. a.

8	1
×	8
6	4	8

Actual Value

Rounded off to nearest 10 →
Rounded off to nearest 10 →

8	0
× 1	0
8	0	0

Estimate Value

Thus, the estimate product of 81 and 8 is 800.

b.

2	7
× 2	8
2	1	6
5	4	×
7	5	6

Actual Value

Rounded off to nearest 10 →
Rounded off to nearest 10 →

3	0
× 3	0
0	0
9	0	×
9	0	0

Estimate Value

Thus, the estimate product of 27 and 28 is 900.

c.

	6 7	Rounded off to nearest 10 →	7 0
×	4 1	Rounded off to nearest 10 →	× 4 0
	6 7		0 0
2 6 8 ×			2 8 0 ×
2 7 4 7	Actual Value		2 8 0 0 Estimate Value

Thus, the estimate product of 67 and 41 is 2800.

c.

	4 3	Rounded off to nearest 10 →	4 0
×	3 2	Rounded off to nearest 10 →	× 3 0
	8 6		0 0
1 2 9 ×			1 2 0 ×
1 3 7 6	Actual Value		1 2 0 0 Estimate Value

Thus, the estimate product of 43 and 32 is 1200.

d.

	6 7	Rounded off to nearest 10 →	7 0
×	4 1	Rounded off to nearest 10 →	× 4 0
	6 7		0 0
2 6 8 ×			2 8 0 ×
2 7 4 7	Actual Value		2 8 0 0 Estimate Value

Thus, the estimate product of 67 and 41 is 2800.

e.

	7 5	Rounded off to nearest 10 →	8 0
×	4 6	Rounded off to nearest 10 →	× 5 0
	4 5 0		0 0
3 0 0 ×			4 0 0 ×
3 4 5 0	Actual Value		4 0 0 0 Estimate Value

Thus, the estimate product of 76 and 46 is 4000.

f.

	8 2	Rounded off to nearest 10 →	8 0
×	6 3	Rounded off to nearest 10 →	× 6 0
	2 4 6		0 0
4 9 2 ×			4 8 0 ×
5 1 6 6	Actual Value		4 8 0 0 Estimate Value

Thus, the estimate product of 82 and 63 is 4800.

g.

7 2	Rounded off to nearest 10 →	7 0
× 4 8	Rounded off to nearest 10 →	× 5 0
5 7 6		0 0
2 8 8 0		3 5 0 0
3 4 5 6	Actual Value	3 5 0 0 Estimate Value

Thus, the estimate product of 72 and 48 is 3500.

h.

4 8	Rounded off to nearest 10 →	5 0
× 2 1	Rounded off to nearest 10 →	× 2 0
4 8		0 0
9 6 0		1 0 0 0
1 0 0 8	Actual Value	1 0 0 0 Estimate Value

Thus, the estimate product of 48 and 21 is 1000.

i.

3 7	Rounded off to nearest 10 →	4 0
× 1 8	Rounded off to nearest 10 →	× 2 0
2 9 6		0 0
3 7 0		8 0 0
6 6 6	Actual Value	8 0 0 Estimate Value

Thus, the estimate product of 37 and 18 is 800.

2. Estimate the product by rounding to the nearest hundred.

Ans. a.

4 1 7	Rounded off to nearest 100 →	4 0 0
× 2 3 1	Rounded off to nearest 100 →	× 2 0 0
4 1 7		0 0 0
1 2 5 1 ×		0 0 0 ×
8 3 4 × ×		8 0 0 × ×
9 6 3 2 7	Actual Value	8 0 0 0 0 Estimate Value

Thus, the estimate product of 417 and 231 is 80000.

b.

7 4 9	Rounded off to nearest 100 →	7 0 0
× 2 6 1	Rounded off to nearest 100 →	× 2 0 0
7 4 9		0 0 0
4 4 9 4 ×		0 0 0 ×
4 9 9 8 × ×		2 1 0 0 × ×
1 9 5 4 8 9	Actual Value	2 1 0 0 0 0 Estimate Value

Thus, the estimate product of 749 and 261 is 210000.

c.

6 3 4	Rounded off to nearest 100 →	6 0 0
× 4 5 9	Rounded off to nearest 100 →	× 5 0 0
5 7 0 6		0 0 0
3 1 7 0 ×		0 0 0 ×
2 5 3 6 × ×		3 0 0 0 × ×
2 9 1 0 0 6	Actual Value	3 0 0 0 0 0 Estimate Value

Thus, the estimate product of 634 and 459 is 300000.

d.

5 3 6	Rounded off to nearest 100 →	5 0 0
× 7 4 8	Rounded off to nearest 100 →	× 7 0 0
4 2 8 8		0 0 0
2 1 4 4 ×		0 0 0 ×
3 7 5 2 × ×		3 5 0 0 × ×
4 0 0 9 2 8	Actual Value	3 5 0 0 0 0 Estimate Value

Thus, the estimate product of 536 and 748 is 350000.

e.

8 5 3	Rounded off to nearest 100 →	9 0 0
3 9 3	Rounded off to nearest 100 →	× 4 0 0
2 5 5 9		0 0 0
7 6 7 7 ×		0 0 0 ×
2 5 5 9 × ×		3 6 0 0 × ×
3 3 5 2 2 9	Actual Value	3 6 0 0 0 0 Estimate Value

Thus, the estimate product of 853 and 393 is 360000.

f.

3 2 7	Rounded off to nearest 100 →	3 0 0
× 8 1 6	Rounded off to nearest 100 →	× 8 0 0
1 9 6 2		0 0 0
3 2 7 ×		0 0 0 ×
2 6 1 6 × ×		2 4 0 0 × ×
2 6 6 8 3 2	Actual Value	2 4 0 0 0 0 Estimate Value

Thus, the estimate product of 327 and 816 is 240000.

g.

4 3 2	Rounded off to nearest 100 →	5 0 0
× 3 4 5	Rounded off to nearest 100 →	× 1 0 0
2 1 6 0		0 0 0
1 7 2 8 0 ×		0 0 0 ×
1 2 9 6 × ×		5 0 0 0 × ×
1 4 9 0 4 0	Actual Value	5 0 0 0 0 0 Estimate Value

Thus, the estimate product of 432 and 345 is 500000.

h.

4 5 8	Rounded off to nearest 100 →	5 0 0
× 7 6 5	Rounded off to nearest 100 →	× 8 0 0
2 2 9 0		0 0 0
2 7 4 8 ×		0 0 0 ×
3 2 0 6 × ×		4 0 0 0 × ×
3 5 0 3 7 0	Actual Value	4 0 0 0 0 0 Estimate Value

Thus, the estimate product of 458 and 765 is 400000.

i.

5 4 8	Rounded off to nearest 100 →	5 0 0
× 1 2 5	Rounded off to nearest 100 →	× 1 0 0
2 7 4 0		0 0 0
1 0 9 6 ×		0 0 0 0 ×
5 4 8 × ×		5 0 0 × ×
6 8 5 0 0	Actual Value	5 0 0 0 0 Estimate Value

Thus, the estimate product of 548 and 125 is 50000.

Word Problems

Exercise 4 (f)

Read carefully and solve. Remember to write statements, show working and give the answer.

Ans. 1. Our heart beats in a minute = 72

No. of minutes in a day = 60 × 24

= 1440

So, hearts beats in a day. = 72 × 1440

1 4 4 0
× 7 2
2 8 8 0
1 0 0 8 0 ×
1 0 3 6 8 0

So, heart will beat 103680 times in a day.

2. Cost of one book = ` 1279

No. of books = ×26

Total cost of 26 books = 7674

2558×

` **33254**

So, cost of 26 books `33254.

3. A book weighs = 1288 g

No. of boxes = ×157

Total weight = 9016

6440××

202216 g

4. A truck can carry bags of rice = 3432
No. of lorries = ×6
Total bags carried by 6 truck = **20592**

So, 6 lorries can truck 20592 bags of rice.

5. Fee for one month = ` 997
No. of months = ×12
Total amount paid by mahi = 1994
997×
` **11964**

So, `11964 paid as fee for a year.

6. No. of mangoes in a box = 135
No. of boxes = ×45
So, total no. of mangoes = 675
540×
6075

So, 6075 mangoes will be packed in 45 boxes.

7. Money collected from each member = ` 1250
Total members = ×9
Total money collected = ` **11250**

So, Aman collected `11250 from 9 members.

8. Money collected from each member = ` 150
Total number = × 9
Total money collected = `**1350**

So, Preeti collected `1350 from 9 members.

9. Money collected from each member = ` 537
Total members = ×31
537
16110
Total money collected = ` 16647

So, A factory will produce 16647 buttons in the month of March.

MCQs

Choose the correct option.

Ans. 1. b 2. b 3. a 4. c

Project

Ans. Do it yourself.

Fun with maths

Colour the correct kite

Ans. a. 1430 × 5 = 7005 7050 7150 7160

b. 1265 × 15 = 17975 1875 18795 18975

c. 347 × 225 = 78075 70075 87075 8005

d. 1500 × 125 = 108500 87500 187000 187500

e. 25 × 95 = 2375 2575 2300 2525

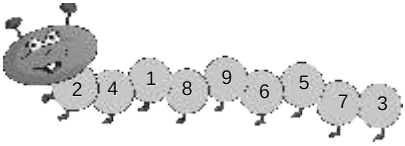
f. 827 × 45 = 32715 37215 35712 35515

Chapter 5 Division

Properties of Multiplication

Divide each of the following and colour the answer caterpillar :

Ans. a. 32 ÷ 4 = **8** b. 45 ÷ 9 = **5** c. 20 ÷ 5 = **4**
d. 18 ÷ 9 = **2** e. 10 ÷ 10 = **1** f. 36 ÷ 12 = **3**
g. 14 ÷ 2 = **7** h. 66 ÷ 11 = **6** i. 81 ÷ 09 = **9**



Exercise 5 (a)

1. Fill in the blanks :

Ans. a. 8 ones ÷ 2 = **4** ones b. 4 tens ÷ 2 = **2** tens

c. **421** ÷ 1 = 421 d. 80 ÷ 80 = **1** e. 112 ÷ **112** = 1
f. **0** ÷ 9 = 0 g. 0 ÷ 15 = **0**
h. 56 ÷ 0 = not define i. **99** ÷ 99 = 1

2. Tick (3) the correct option :

Ans. a. iii. meaningless b. i. 38

Division by a one digit number

Exercise 5 (b)

1. Divide and check your answer :

Ans. a.

```
8) 7 2 9 (91
  – 7 2 ↓
      9
    – 8
      1
```

Checking

Dividend	=	Divisor × Quotient + R
729	=	8 × 91 + 1
729	=	728 + 1
729	=	729
L.H.S.	=	R.H.S.

b.

```
3) 6 4 9 (216
  – 6 ↓
    4
  – 3 ↓
    1 9
  – 1 8
      1
```

Checking

Dividend	=	Divisor × Quotient + R
649	=	3 × 216 + 1
649	=	648 + 1
649	=	649
L.H.S.	=	R.H.S.

c.

```
9) 9 7 8 (108
  – 9 ↓ ↓
    7 8
  – 7 2
      6
```

Checking

Dividend	=	Divisor × Quotient + R
978	=	9 × 108 + 6
978	=	972 + 6
978	=	978
L.H.S.	=	R.H.S.

d.

```
7) 2 3 5 (33
  – 2 1 ↓
    2 5
  – 2 1
      4
```

Checking

Dividend	=	Divisor × Quotient + R
235	=	7 × 33 + 4
235	=	231 + 4
235	=	235
L.H.S.	=	R.H.S.

e.

```
9) 2 6 7 (29
  −1 8 ↓
     8 7
   −8 1
       6
```

Checking

Dividend	=	Divisor × Quotient + R
267	=	9 × 29 + 6
267	=	261 + 6
267	=	267
L.H.S.	=	R.H.S.

f.

```
9) 4 5 7 (50
  −4 5 ↓
       7
    −0
       7
```

Checking

Dividend	=	Divisor × Quotient + R
457	=	9 × 50 + 7
457	=	450 + 7
457	=	457
L.H.S.	=	R.H.S.

g.

```
7) 9 0 3 (129
  −7 ↓
    2 0
  −1 4 ↓
      6 3
    −6 3
        0
```

Checking

Dividend	=	Divisor × Quotient + R
903	=	7 × 129 + 0
903	=	903 + 0
903	=	903
L.H.S.	=	R.H.S.

h.

```
2) 2 1 5 3 (1076
  −2   ↓
     1 5
   −1 4 ↓
       1 3
     −1 2
         1
```

Checking

Dividend	=	Divisor × Quotient + R
2153	=	2 × 1076 + 1
2153	=	2152 + 1
2153	=	2153
L.H.S.	=	R.H.S.

i.

```
8) 8 4 3 7 (1054
  −8 ↓ ↓
     4 3
   −4 0 ↓
       3 7
     −3 2
         5
```

Checking

Dividend	=	Divisor × Quotient + R
8437	=	8 × 1054 + 5
8437	=	8432 + 5
8437	=	8437
L.H.S.	=	R.H.S.

j.

```
3) 4 0 4 0 (1346
 – 3 ↓
   1 0
  – 9 ↓
     1 4
   – 1 2 ↓
       2 0
     – 1 8
         2
```

Checking

Dividend	=	Divisor × Quotient + R
4040	=	3 × 1346 + 2
4040	=	4038 + 2
4040	=	4040
L.H.S.	=	R.H.S.

k.

```
6) 2 4 1 6 (402
 – 2 4 ↓ ↓
       1 6
     – 1 2
         4
```

Checking

Dividend	=	Divisor × Quotient + R
2416	=	6 × 402 + 4
2416	=	2412 + 4
2416	=	2416
L.H.S.	=	R.H.S.

l.

```
6) 7 5 9 5 (1265
 – 6 ↓
   1 5
  – 1 2 ↓
       3 9
     – 3 6 ↓
         3 5
       – 3 0
           5
```

Checking

Dividend	=	Divisor × Quotient + R
7595	=	6 × 1265 + 5
7595	=	7590 + 5
7595	=	7595
L.H.S.	=	R.H.S.

m.

```
3) 1 0 5 9 (353
 –   9 ↓
     1 5
   – 1 5 ↓
         9
       – 9
         0
```

Checking

Dividend	=	Divisor × Quotient + R
1059	=	3 × 353 + 0
1059	=	1059 + 0
1059	=	1059
L.H.S.	=	R.H.S.

n.

```
4) 3 6 4 8 (912
  – 3 6 ↓
        4
      – 4 ↓
          8
        – 8
          0
```

Checking

Dividend	=	Divisor × Quotient + R
3648	=	4 × 912 + 0
3648	=	3648 + 0
3648	=	3648
L.H.S.	=	R.H.S.

o.

```
7) 1 3 8 2 (197
  –   7 ↓
      6 8
    – 6 3 ↓
        5 2
      – 4 9
          3
```

Checking

Dividend	=	Divisor × Quotient + R
1382	=	7 × 197 + 3
1382	=	1379 + 3
1382	=	1382
L.H.S.	=	R.H.S.

p.

```
7) 5 1 2 (197
  –   4 8 ↓
        3 2
      –   3 2
            0
```

Checking

Dividend	=	Divisor × Quotient + R
512	=	8 × 64 + 0
512	=	512 + 0
512	=	512
L.H.S.	=	R.H.S.

2. Find the quotient and the remainder :

Ans. a.

```
8) 9 2 4 (115
  – 8 ↓
    1 2
  – 8 ↓
      4 4
    – 4 0
        4
```

Q = 115, R = 4

b.

```
4) 8 4 4 (211
  – 8 ↓
      4
    – 4 ↓
        4
      – 4
        0
```

Q = 211, R = 0

c.

```
3) 9 6 9 (323
  – 9 ↓
      6
    – 6 ↓
        9
      – 9
        0
```

Q = 323, R = 0

d.

```
5) 5 6 5 (113
  −5
    6
   −5
     1 5
    −1 5
       0
```

Q = 113, R = 0

e.

```
6) 7 3 8 (123
  −6
    1 3
   −1 2
      1 8
     −1 8
        0
```

Q = 123, R = 0

f.

```
7) 8 7 4 (124
  −7
    1 7
   −1 4
      3 4
     −2 8
        6
```

Q = 124, R = 6

g.

```
3) 9 5 4 3 (3181
  −9
    5
   −3
    2 4
   −2 4
        3
       −3
        0
```

Q = 3181, R = 0

h.

```
6) 8 6 1 6 (1436
  −6
    2 6
   −2 4
      2 1
     −1 8
        3 6
       −3 6
          0
```

Q = 1436, R = 0

i.

```
4) 7 5 5 0 (1887
  −4
    3 5
   −3 2
      3 5
     −3 2
        3 0
       −2 8
          2
```

Q = 1887, R = 2

j.

```
2) 4 5 6 8 (2284
  −4
    5
   −4
    1 6
   −1 6
        8
       −8
        0
```

Q = 2284, R = 0

k.

```
6) 5 3 8 3 (897
  −4 8
     5 8
    −5 4
       4 3
      −4 2
         1
```

Q = 897, R = 1

l.

```
9) 6 8 1 8 (757
  −6 3
     5 1
    −4 5
       6 8
      −6 3
         5
```

Q = 757, R = 5

m.

```
7) 5 1 2 0 (731
  – 4 9
    2 2
  – 2 1
      1 0
        – 7
          3
```

Q = 731, R = 3

n.

```
7) 9 4 3 2 (1347
  – 7
    2 4
  – 2 1
      3 3
    – 2 8
        5 2
      – 4 9
          3
```

Q = 1347, R = 3

o.

```
5) 6 0 0 5 (1201
  – 5
    1 0
  – 1 0
        0
      – 0
          5
        – 5
          0
```

Q = 1201, R = 0

p.

```
8) 1 3 6 4 (170
  –   8
      5 6
    – 5 6
          4
          0
          4
```

Q = 170, R = 4

Exercise 5 (c)

1. Divide the following and write the quotient and remainder :

Ans. a.

```
62) 3 0 4 (4
  – 2 4 8
      5 6
```

Q = 4, R = 56

b.

```
18) 1 4 1 (7
  – 1 2 6
      1 5
```

Q = 7, R = 15

c.

```
42) 3 4 5 (8
  – 3 3 6
        9
```

Q = 8, R = 9

d.

```
44) 4 3 3 (9
  – 3 9 6
      3 7
```

Q = 9, R = 37

e.

```
35) 2 5 7 (7
  – 2 4 5
      1 2
```

Q = 7, R = 12

f.

```
81) 7 3 5 (9
  – 7 2 9
        6
```

Q = 9, R = 6

g.

```
21) 1 0 4 (4
  – 8 4
    2 0
```

Q = 4, R = 20

h.

```
56) 4 6 0 (8
  – 4 4 8
      1 2
```

Q = 8, R = 12

i.

```
38) 2 8 1 (7
  – 2 6 6
      1 5
```

Q = 7, R = 15

j.

```
77) 9 0 4 (11
   −7 7 ↓
    1 3 4
   −7 7
     5 7
```

Q = 11, R = 57

k.

```
38) 6 0 7 (15
   −3 8 ↓
    2 2 7
   −1 9 0
      3 7
```

Q = 15, R = 37

l.

```
45) 5 1 3 (11
   −4 5 ↓
      6 3
   −4 5
      1 8
```

Q = 11, R = 18

m.

```
82) 9 5 2 (11
   −8 2 ↓
    1 3 2
   −8 2
      5 0
```

Q = 11, R = 50

n.

```
18) 1 1 5 (6
   −1 0 8
        7
```

Q = 6, R = 7

o.

```
57) 2 3 1 (4
   −2 2 8
        3
```

Q = 4, R = 3

p.

```
34) 4 5 6 (11
   −3 4 ↓
    1 1 6
   −1 0 2
      1 4
```

Q = 13, R = 14

2. Divide and check your answer :

Ans. a.

```
48) 6 4 0 0 (133
   −4 8 ↓ |
    1 6 0 |
   −1 4 4 ↓
      1 6 0
    −1 4 4
        1 6
```

Check

Q × D + R = Dividend

133 × 48 + 16

6384 + 16

6400 (Dividend)

So, answer is correct.

b.

```
27) 3 5 3 3 (130
   −2 7 ↓ |
      8 3 |
    −8 1 ↓
        2 3
      −0 0
        2 3
```

Check

Q × D + R = Dividend

130 × 27 + 23

3510 + 23

3533 (Dividend)

So, answer is correct.

c.

```
75) 6 3 0 1 (84
   – 6 0 0 ↓
     3 0 1
   – 3 0 0
         1
```

Check
Q × D + R = Dividend
84 × 75 + 1
6300 + 1
6301 (Dividend)
So, answer is correct.

d.

```
28) 4 4 2 4 (158
   – 2 8 ↓
     1 6 2
   – 1 4 0 ↓
       2 2 4
     – 2 2 4
           0
```

Check
Q × D + R = Dividend
158 × 28 + 0
4424 + 0
4424 (Dividend)
So, answer is correct.

e.

```
93) 5 2 0 4 (55
   – 4 6 5 ↓
     5 5 4
   – 4 6 5
       8 9
```

Check
Q × D + R = Dividend
55 × 93 + 89
5115 + 89
5204 (Dividend)
So, answer is correct.

f.

```
62) 9 0 8 4 (146
   – 6 2 ↓
     2 8 8
   – 2 4 8 ↓
       4 0 4
     – 3 7 2
         3 2
```

Check
Q × D + R = Dividend
146 × 62 + 32
9052 + 32
9084 (Dividend)
So, answer is correct.

g.

```
17) 4 1 1 0 (241
   – 3 4 ↓
     7 1
   – 6 8 ↓
       3 0
     – 1 7
       1 3
```

h.

```
53) 2 0 8 9 (39
   – 1 5 9 ↓
     4 9 9
   – 4 7 7
       2 2
```

Check
Q × D + R = Dividend
241 × 17 + 13
4097 + 13
4110 (Dividend)
So, answer is correct.

Check
Q × D + R = Dividend
39 × 53 + 22
2067 + 22
2089 (Dividend)
So, answer is correct.

i.

```
29) 3 3 7 4 (116
   – 2 9 ↓
     4 7
   – 2 9 ↓
     1 8 4
   – 1 7 4
       1 0
```

j.

```
18) 3 7 0 8 (206
   – 3 6 ↓ ↓
       1 0 8
     – 1 0 8
           0
```

Check
Q × D + R = Dividend
116 × 29 + 10
3364 + 10
3374 (Dividend)
So, answer is correct.

Check
Q × D + R = Dividend
206 × 18 + 0
3708 + 0
3708 (Dividend)
So, answer is correct.

k.

```
52) 8 8 4 1 (170
   – 5 2 ↓
     3 6 4
   – 3 6 4 ↓
           1
         – 0
           1
```

l.

```
41) 6 3 9 4 (155
   – 4 1 ↓
     2 2 9
   – 2 0 5 ↓
       2 4 4
     – 2 0 5
         3 9
```

Check
Q × D + R = Dividend
170 × 52 + 1
8840 + 1
8841 (Dividend)
So, answer is correct.

Check
Q × D + R = Dividend
155 × 41 + 39
6355 + 39
6394 (Dividend)
So, answer is correct.

Division by 10,100 and 1000

Exercise 5 (d)

1. Fill in the blanks :

Ans.

a.	3200 ÷ 100	=	**32**	b.	69000 ÷ 1000	=	**69**
c.	3000 ÷ 100	=	**30**	d.	612000 ÷ 1000	=	**612**
e.	15000 ÷ 1000	=	**15**	f.	20000 ÷ 1000	=	**20**
g.	780 ÷ 10	=	**78**	h.	92000 ÷ 1000	=	**92**

2. Divide the following numbers by 10 and write the quotient and remainder :

Ans. a.

```
10) 3 9 8 (39
   – 3 0 ↓
     9 8
   – 9 0
       8
```

Q = 39, R = 8

b.

```
10) 8 9 4 (89
   – 8 0 ↓
     9 4
   – 9 0
       4
```

Q = 89, R = 4

c.

```
10) 1 0 1 1 (101
   – 1 0 ↓ ↓
       1 1
     – 1 0
         1
```

Q = 101, R = 1

d.

```
10) 3 9 2 2 (392
   – 3 0 ↓ |
     9 2   |
   – 9 0 ↓
       2 2
     – 2 0
         2
```

Q = 392, R = 2

e.

```
10) 4 6 2 (46
   – 4 0 ↓
     6 2
   – 6 0
       2
```

Q = 46, R = 2

f.

```
10) 9 6 1 (96
   – 9 0 ↓
     6 1
   – 6 0
       1
```

Q = 96, R = 1

g.

```
10) 2 6 5 4 (265
   – 2 0 ↓ |
     6 5   |
   – 6 0 ↓
       5 4
     – 5 0
         4
```

Q = 265, R = 4

h.

```
10) 1 2 3 4 5 (1234
   – 1 0 ↓ | |
     2 3   | |
   – 2 0 ↓ |
       3 4   |
     – 3 0 ↓
         4 5
       – 4 0
           5
```

Q = 1234, R = 5

3. Divide the following numbers by 100 :

Ans. a.

```
100) 9 2 5 (9
   – 9 0 0
     2 5
```

Q = 1, R = 25

b.

```
100) 3 4 9 8 (34
   – 3 0 0 ↓
     4 9 8
   – 4 0 0
       9 8
```

Q = 34, R = 98

c.

```
100) 52630 (526
   –500↓ |
     263 |
   –200↓
     630
   –600
      30
```

Q = 526, R = 30

d.

```
100) 4810 (48
   –400↓
     810
   –800
      10
```

Q = 48, R = 10

e.

```
100) 13629 (136
   –100↓ |
     362 |
   –300↓
     629
   –600
      29
```

Q = 136, R = 29

f.

```
100) 71808 (718
   –700↓ |
     180 |
   –100↓
     808
   –800
       8
```

Q = 718, R = 8

g.

```
100) 5 6 2 9 (56
   – 5 0 0 ↓
     6 2 9
   – 6 0 0
       2 9
```

Q = 56, R = 29

h.

```
100) 25607 (256
   –200↓ |
     560 |
   –500↓
     607
   –600
       7
```

Q = 256, R = 7

i.

```
100) 239411 (2394
   –200↓ | |
     394 | |
   –300↓
     941 |
   –900↓
     411
   –400
      11
```

Q = 2394, R = 11

j.

```
100)7201(72
   −700↓
     201
   −200
       1
```

Q = 72, R = 1

k.

```
100)48029(480
   −400↓
     802
   −800↓
      29
     −00
      29
```

Q = 480, R = 29

l.

```
100)623222(6232
   −600↓
     232
   −200↓
     322
   −300↓
     222
    −200
      22
```

Q = 6232, R = 22

4. Divide the following numbers by 1000 :

Ans. a.

```
1000)3856(3
   −3000
     856
```

Q = 3, R = 856

b.

```
1000)51058(57
   −5000↓
     1058
    −1000
       58
```

Q = 51, R = 58

c.

```
1000)5209(5
   −5000
     209
```

Q = 5, R = 209

d.

```
1000)72002(72
   −7000↓
     2002
    −2000
        2
```

Q = 72, R = 2

e.

```
1000)6800(6
   −6800
     800
```

Q = 6, R = 800

f.

```
1000)21347(21
   −2000↓
     1347
    −1000
      347
```

Q = 21, R = 347

g.

```
1000)460723(460
   −4000↓
     6072
    −6000↓
      723
     −000
      723
```

Q = 460, R = 723

h.

```
1000)62820(62
   −6000↓
     2820
    −2000
      820
```

Q = 62, R = 820

i.

```
1000)572009(572
   −5000↓
     7200
    −7000↓
     2009
    −2000
        9
```

Q = 572, R = 9

j.
```
1000)590632(590
    –5000↓
     9063
    –9000↓
      632
     –000
      632
```
Q = 590, R = 632

k.
```
1000)37954(37
    –3000↓
      7954
     –7000
       954
```
Q = 37, R = 954

l.
```
1000)13790(13
    –1000↓
      3790
     –3000
       790
```
Q = 13, R = 790

Estimating Quotients

Exercise 5 (e)

1. Fill in the table and estimate the quotient :

Ans.

	Problem	Estimated Quotient	Actual Quotient
a.	78 ÷ 21	**4**	**3**
b.	92 ÷ 18	**4**	**5**
c.	289 ÷ 69	**4**	**4**
d.	691 ÷ 51	**3**	**13**
e.	753 ÷ 29	**25**	**25**

2. Match the columns as shown :

Ans.

QUESTION	ROUNDS TO	DIVISION	ESTIMATED QUOTIENT
a. 193 ÷ 24	090 ÷ 40	32 ÷ 4	9
b. 315 ÷ 43	090 ÷ 30	19 ÷ 2	2
c. 91 ÷ 36	190 ÷ 20	87 ÷ 4	3
d. 86 ÷ 27	320 ÷ 40	09 ÷ 3	8
e. 868 ÷ 37	870 ÷ 40	09 ÷ 4	21

HOTS

Ans. a.
```
      ②1
13) 2 7⑦
  – 2⑥↓
     1⑦
   – 1 3
       4
```
Q = **21** , R = **4**

b.
```
     3⑧①
9) 3④2 9
  –②⑦↓
     7 2
   –⑦2
     0 9
      –⑨
       0
```
Q = **381** , R = **0**

c.
```
     ②⓪3
14) 2⑧4 6
  –②⑧↓↓
     0④6
   – 4 2
       4
```
Q = **203** , R = **4**

Word Problems

Exercise 5 (f)

Solve these word problems :

Ans. 1. No. of pencils = 868 pencils
No. of boxes = 7
No. of pencils in each box = 868 ÷ 7
So, There are 124 pencils in each box.

```
7) 868 (124
  -7↓
   16
  -14↓
    28
   -28
     0
```

2. Total money spent on tickets = ` 2125
No. of tickets = 25
\ Cost of one ticket = ` 2125 ÷ 25
So, cost of 1 ticket `85.

```
25) 2125 (85
   -200↓
     125
    -125
       0
```

3. No. of stickers = 6385
No. of children = 51
So, each child will get stickers = 6385 ÷ 51
= 125
So, each child will get 125 stickers and 10 stickers are left over.

```
51) 6385 (125
   -51↓
    128
   -102↓
     265
    -255
      10
```

4. No. of toy produced = 7050
No. of days = 30
Toys are produced in a day = 7050 ÷ 30
= 235
So, 235 toys are produced is a day.

```
30) 7050 (235
   -60↓
    105
   -90↓
     150
    -150
       0
```

5. Total calories = 4064
Quantity of mango squash = 8 litres
Calories in each litre of mango squash = 4064 ÷ 8
= 508
There are 508 calories in each litre of mango squash.

```
8) 4064 (508
  -40↓↓
     64
    -64
      0
```

6. A librarian has books = 5526
No. of shelves = 7
No. of books in each shall = 5526 ÷ 7
= 789

So, 789 books will be arranged in each shelf and 3 books will be left over.

```
7) 5 5 2 6 (789
  − 4 9 ↓
    6 2
  − 5 6 ↓
      6 6
    − 6 3
        3
```

7. Total costs = ` 1500
Quantity of rice = 25 kg
Cost of 1 kg of rice = 1500 ÷ 25
= ` 60

So, cost of 1 kg of rice is `60.

```
25) 1 5 0 0 (60
   − 1 5 0 ↓
       0 0
     − 0 0
         0
```

Unitary Method

Exercise 5 (g)

Solve the following questions :

Ans. 1. Cost of 5 kg of rice = ` 270
Cost of 1 kg of rice = ` 270 ÷ 5
= ` 54
So, Cost of 9 kg of rice = 54 × 9
= ` 486

```
5) 270 (54
  − 25↓
    20
  − 20
     0
```

2. Cost of 12 m of pipe = ` 48
Cost of 1 m of pipe = ` 48 ÷ 12 = ` 4
So, Cost of 11 m of pipe = ` 4 × 11 = ` 44
= ` 44

3. Vidhya sold 3 mixers for = ` 14625
She sold 1 mixer for = ` 14625 ÷ 3
= ` 4875
She sold 5 mixers for = 5 × 4875
= ` 24375

```
3) 14625 (4875
  −12 ↓
    26
  −24 ↓
     22
    −21 ↓
      15
     −15
       0
```

4. By selling 48 kg of apples he gets = ` 768
By selling 1 kg of apples he gets = 768 ÷ 48
By selling 4 kg of apples he gets = ` 16 × 4
= ` 64

```
48) 768 (16
   – 48↓
     288
   – 288
       0
```

5. Cost of 5 Chocolates = ` 240
Cost of 1 Chocolates = ` 240 ÷ 5
Cost of 7 Chocolates = 48 × 7
= ` 336

```
5) 240 (48
  – 20↓
     40
   – 40
      0
```

6. Cot of 20 toys cars = ` 360
Cost of 1 toy cars = ` 360 ÷ 20
= ` 18
So, Cost of 23 cars = ` 18 × 23
= ` 414

```
5) 270 (54
  – 25↓
     20
   – 20
      0
```

7. No. of dresses = 21
No. of days = 7
He will stitch in one day = 21 ÷ 7 = 3 dresses
He will stitch dress in 3 week = 3 × 3 × 7 = 63 dresses

8. Cost of 15 T-shirts = ` 3045
Cost of 1 T-shirts = ` 3045 ÷ 15
= ` 203
\ Cost of 5 T-shirts = 203 × 5
= ` 1015

```
15) 3 0 4 5 (203
   – 3 0 ↓ ↓
       4 5
     – 4 5
         0
```

9. Cost of 5 books = ` 2950
Cost of 1 book = ` 2950 ÷ 5
= ` 590
So, Cost of 1 book = ` 590 × 9
= ` 5310

```
5) 2 9 5 0 (590
  – 2 5 ↓ |
     4 5  |
   – 4 5  ↓
       0
     – 0
       0
```

10. Vimal makes baskets in 3 days = 57 baskets
Vimal makes basket in 1 day = 57 ÷ 3 = 19 baskets
Vimal can make baskets in 2 week = 19 × 2 × 7
= 266 baskets

11. Cost of a dozen (12) bananas = ` 300
Cost of 1 banana = ` 300 ÷ 12 = ` 25
Cost of 14 bananas = ` 25 × 14 = ` 350

12. The rent of house for 1 year (12 months) = ` 48120
The rent of 1 month = ` 48120 ÷ 12
= ` 4010
So, The rent of 7 months = ` 4010 × 7
= ` 28070

```
12 ) 48120 ( 4010
   – 48
     12
   – 12
      0
     – 0
      0
```

MCQs

Choose the correct option.

Ans. 1. b 2. b 3. a 4. c
5. a 6. b

Fun with Maths

A cricket match is being played at the Feroze Gandhi Stadium. The seating arrangement is in 6 blocks marked A to F and three circles. The innermost circle is No. 1, the middle is No. 2, and the outermost is No. 3.

How many people sat in

		Circle 1		**Circle2**		**Circle 3**		
Block	A	169	+	272	+	728	=	1169
	B	174	+	720	+	790	=	1684
	C	135	+	305	+	415	=	855
	D	326	+	542	+	395	=	1263
	E	88	+	284	+	456	=	828
	F	86	+	384	+	500	=	970
						Grand Total	=	6769

Find out

Scahin Tendulkar

Chapter

6 Multiples and Factors

Common Multiples

Let us understand, write two common multiples of 2 and 3.

Ans. We write the multiples of 2.

2 4 **6** 8 10 **12** 14 16 **18** 20....

We write the multiples of 3.

3 **6** 9 **12** 15 **18** 21 24 27 30....

Mental Maths

1. Tick (3) the multiples of 9.

Ans. 13 ( ) 14 ( ) 18 (3) 16 ( ) 10 ( ) 36 (3) 7 ( )

2. Tick (3) the multiples of 36.

Ans. 72 (3) 10 ( ) 12 ( ) 216 (3) 26 ( ) 180 (3) 36 (3)

3. Write 'T' for true or 'F' for false in ( ).

Ans. a. 27 is a multiple of 4. (F) b. 35 is multiple of 5. (T)

Exercise 6 (a)

1. Write the next five multiples of the following :

Ans.

a. 7,	**14**	**21**	**28**	**35**	**42**
b. 15,	**30**	**45**	**60**	**75**	**90**
c. 30,	**60**	**90**	**120**	**150**	**180**
d. 20,	**20**	**40**	**60**	**80**	**100**
e. 60,	**120**	**180**	**240**	**300**	**360**

2. Write the following multiples

Ans. a. 6th multiple of 6 → (36) b. 4th multiple of 14 → (56)

c. 5th multiple of 13 → (65) d. 9th multiple of 9 → (81)

e. 7th multiple of 11 → (77) f. 7th multiple of 8 → (56)

3. Answer the following in Yes or No :

Ans. a. Yes b. Yes c. No d. Yes

4. Find the first two common multiples of :

Ans. a. Multiples of 3 **3, 6, 9, 12, 15, 18, 21, 24, 27, 30**
Multiples of 4 **4, 8, 12, 16, 20, 24, 28, 32, 36, 40**
Common multiples of 3 and 4 **12, 24**

b. Multiples of 5 **5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60**
Multiples of 6 **6, 12, 18, 24, 30, 36, 42, 48, 54, 60, 66**
Common multiples of 5 and 6 **30, 60**

c. Multiples of 3 **3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33**
Multiples of 5 **5, 10, 15, 20, 25, 30, 35, 40, 45, 50**
Common multiples of 3 and 5 **15, 30**

5. Find the LCM of the following :

Ans. a. **6 and 8**
Multiple of 6 = 6, 12, 18, **24,** 30, 36, 42, **48,** 54, 60
Multiple of 8 = 8, 16, **24,** 32, 40, **48,** 56, 64, 72, 80
So, LCM = 24

b. **3 and 5**
Multiple of 3 = 3, 6, 9, 12, **15,** 18, 21, 24, 27, **30**
Multiple of 5 = 5, 10, **15,** 20, 25, **30,** 35, 40, 45, 50
So, LCM = 15

c. **10 and 12**
Multiple of 10 = 10, 20, 30, 40, 50, **60,** 70, 80, 90, 100, 110, **120**
Multiple of 12 = 12, 24, 36, 48, **60,** 72, 84, 96, 108, **120**
So, LCM = 60

Factors

Exercise 6 (b)

1. Find factors of the following.

Ans. a. **18**
18 = 1 × 18
= 2 × 9
= 3 × 6
So, factors of 18
= 1, 2, 3, 6, 9, 18

b. **22**
22 = 1 × 22
= 2 × 11
So, factors of 22
= 1, 2, 11, 22

c. **52**

52 = 1 × 52
= 2 × 26
= 4 × 13

So, factors of 52
= 1, 2, 4,13, 26, 52

d. **30**

30 = 1 × 30
= 2 × 15
= 3 × 10
= 5 × 6

So, factors of 30
= 1, 2, 3, 5, 6, 10, 15, 30

e. **75**

75 = 1 × 75
= 3 × 25
= 5 × 15

So, factors of 75
= 1, 3, 5, 15, 25, 75

f. **60**

60 = 1 × 60
= 2 × 30
= 3 × 20
= 4 × 15
= 5 × 12
= 6 × 10

So, factors of 60
= 1, 2, 3, 4, 5, 6, 10, 12, 15, 20, 30, 60

2. Write all the factors of the numbers in each pair. Then find the common factors.

Ans. a. **21, 14**

Factors of 21 = 1, 3, 7, 21
Factors of 14 = 1, 2, 7, 14
Common Factors = 1, 7

b. **27, 24**

Factors of 27 = 1, 3, 9, 27
Factors of 24 = 1, 2, 3, 4, 6, 8, 12, 24
Common Factors = 1, 3

c. **6, 16**

Factors of 6 = 1, 2, 3, 6
Factors of 16 = 1, 2, 4, 8, 16
Common Factors = 1, 2

d. **20, 18**

Factors of 20 = 1, 2, 4, 5, 10, 20
Factors of 18 = 1, 2, 3, 6, 9, 18
Common Factors = 1, 2

e. **20, 30**

Factors of 20	=	1, 2, 4, 5, 10, 20
Factors of 30	=	1, 2, 3, 5, 6, 10, 15, 30
Common Factors	=	1, 2, 5, 10

f. **30, 45**

Factors of 30	=	1, 2, 3, 5, 6, 10, 15, 30
Factors of 45	=	1, 3, 5, 9, 15, 45
Common Factors	=	1, 3, 5, 15

g. **22, 4**

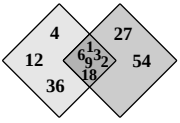
Factors of 22	=	1, 2, 11, 22
Factors of 4	=	1, 2, 4
Common Factors	=	1, 2

h. **10, 25**

Factors of 10	=	1, 2, 5, 10
Factors of 25	=	1, 5, 25
Common Factors	=	1, 5

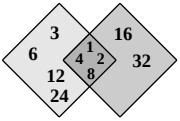
3. Write all the factors of these numbers. Write the common factors in the part shaded green.

Ans. a. **36, 54**



Factors of 36	**1, 2, 3, 4, 6, 9, 12, 18, 36**
Factors of 54	**1, 2, 3, 6, 9, 18, 27, 54**
Common factors	**1, 2, 3, 6, 9, 18**

b. **24, 32**



Factors of 24	**1, 2, 3, 4, 6, 8, 12, 24**
Factors of 32	**1, 2, 4, 8, 16, 32**
Common factors	**1, 2, 4, 8**

4. Say whether the following statements are True or False.

Ans. a. False b. False c. True
d. True e. False f. True

Even and Odd Numbers

Exercise 6 (c)

1. Colour the boxes with even number blue and odd number red.

Ans.

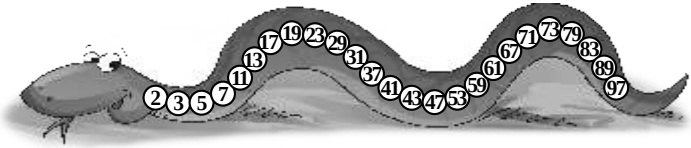
B 2	R 17	B 12	B 22	R 47	B 40	R 27
B 16	B 8	R 11	R 3	B 56	B 20	B 24
R 19	R 1	R 9	B 4	R 75	R 35	R 49
B 60	R 59	B 18	R 5	B 58	R 65	B 70
B 46	R 53	R 7	B 90	B 84	R 71	B 74
R 93	B 48	B 6	B 64	R 51	R 45	R 99

2. Write the following :

Ans. a. 1 b. 999 c. 2 d. 998

3. Write the prime numbers between 1 and 100 in the snake.

Ans.



4. Check whether the number is prime or composite by listing its factors.

Ans. a. **5**

Factors of 5 = 1, 5

So, It is a prime no.

b. **12**

Factors of 12 = 1, 2, 3, 4, 6, 12

So, It is not a prime no.

c. **15**

Factors of 15 = 1, 3, 5, 15

So, It is not a prime no.

d. **27**

Factors of 27 = 1, 3, 9, 27

So, It is not a prime no.

e. **31**

Factors of 31 = 1, 31

So, It is a prime no.

f. **39**
Factors of 39 = 1, 3, 13, 39
So, It is not a prime no.

g. **52**
Factors of 52 = 1, 2, 4, 13, 26, 52
So, It is not a prime no.

h. **60**
Factors of 60 = 1, 2, 3, 4, 5, 6, 10, 12, 15, 20, 30, 60
So, It is not a prime no.

i. **67**
Factors of 67 = 1, 67
So, It is a prime no.

j. **89**
Factors of 89 = 1, 89
So, It is a prime no.

k. **95**
Factors of 95 = 1, 5, 19, 95
So, It is not a prime no.

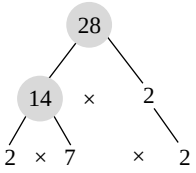
l. **99**
Factors of = 1, 3, 9, 11, 33, 99
So, It is not a prime no.

Prime Factorisation

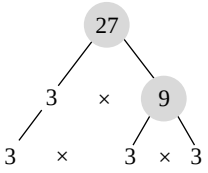
Mental Maths

Fill in the blanks :

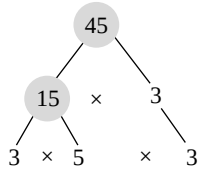
Ans. 1.



2.



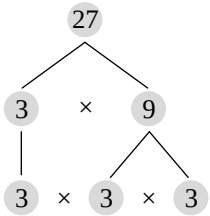
3.



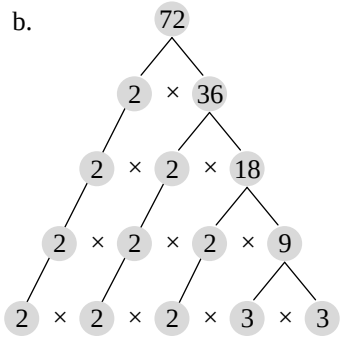
Exercise 6 (d)

1. Find the prime factors of given numbers by using factor tree method :

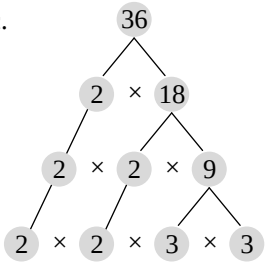
Ans. a.



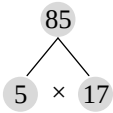
b.



c.



d.



2. Find the prime factors of given numbers by using division method :

Ans. a.

2	32
2	16
2	8
2	4
2	2
	1

Prime factors of 32
= 2 × 2 × 2 × 2 × 2

b.

2	96
2	48
2	24
2	12
2	6
3	3
	1

Prime factors of 96
= 2 × 2 × 2 × 2 × 2 × 3

c.

2	84
2	42
3	21
7	7
	1

Prime factors of 84
$= 2 \times 2 \times 3 \times 7$

d.

2	196
2	98
7	49
7	7
	1

Prime factors of 196
$= 2 \times 2 \times 7 \times 7$

The Divisibility Rules

Exercise 6 (e)

1. In each column put a (3) if the number at left is divisible by the number at the top of the column. Otherwise put (7) :

Ans.

	Numbers	2	3	4	5	10
a.	524	3	7	3	7	7
b.	240	3	3	3	3	3
c.	1155	7	3	7	3	7
d.	26580	3	3	3	3	3
e.	98664	3	3	3	7	7
f.	39042	3	3	7	7	7

2. Which of all following numbers are divisible :

Ans. a. by 2?

i. 8241 ( ) ii. 9532 (3) iii. 3863 ( ) iv. 5869 ( )

b. by 3?

i. 2124 (3) ii. 9531 (3) iii. 2401 ( ) iv. 3090 (3)

c. by 4?

i. 8677 ( ) ii. 2122 ( ) iii. 9531 ( ) iv. 3084 (3)

HOTS

Ans. 1. 1

2. a. 15, 25, 35, 45, 55 b. Yes

c. May be or May not be.

d. May be or May not be.

e. Yes

MCQs

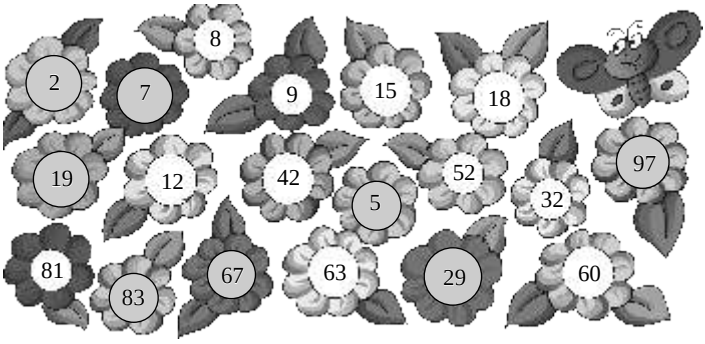
Choose the correct option.

Ans. 1. a 2. b 3. c 4. b

Fun with Maths

Here is a butterfly. She can sit only on the flowers with prime numbers. Colour all the flowers that has prime numbers.

Ans.



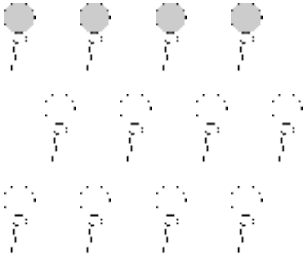
Chapter

7 Fractions

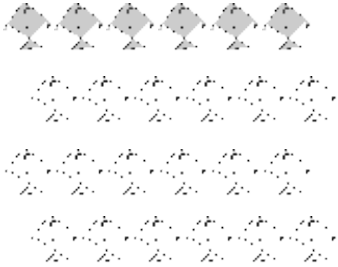
Looking Back

1. Colour the objects to show the fraction of the following collections :

Ans. a. $\frac{1}{3}$

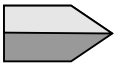


b. $\frac{1}{4}$



2. Write fraction for the parts shaded dark and light :

Ans.

	Light green	dark	light
a.		$\frac{3}{5}$	$\frac{2}{5}$
b.		$\frac{1}{2}$	$\frac{1}{2}$
c.		$\frac{5}{12}$	$\frac{7}{12}$

Exercise 7 (a)

1. Colour all the proper fractions in red and improper fractions in green.

Ans. G for Green and R for Red

$\frac{11}{3}$ **G** $\frac{3}{5}$ **R** $\frac{11}{8}$ **G** $\frac{5}{4}$ **G** $\frac{1}{2}$ **R** $\frac{1}{5}$ **R** $\frac{12}{7}$ **G** $\frac{9}{13}$ **R**

$\frac{6}{5}$ **G** $\frac{2}{3}$ **R** $\frac{13}{3}$ **G** $\frac{9}{11}$ **R** $\frac{9}{7}$ **G** $\frac{8}{20}$ **R** $\frac{15}{7}$ **G** $\frac{2}{4}$ **R**

2. Convert the following improper fractions into mixed fractions :

Ans. a. $\mathbf{\frac{35}{6}}$

$$\begin{array}{r} 5 \\ 6\overline{)35} \\ -30 \\ \hline 5 \end{array}$$

So, mixed fraction = $5\frac{5}{6}$

b. $\mathbf{\frac{25}{6}}$

$$\begin{array}{r} 4 \\ 6\overline{)25} \\ -24 \\ \hline 1 \end{array}$$

So, mixed fraction = $4\frac{1}{6}$

c. $\mathbf{\frac{18}{4}}$

$$\begin{array}{r} 4 \\ 4\overline{)18} \\ -16 \\ \hline 2 \end{array}$$

So, mixed fraction = $4\frac{2}{4}$

d. $\mathbf{\frac{8}{3}}$

$$\begin{array}{r} 2 \\ 3\overline{)8} \\ -6 \\ \hline 2 \end{array}$$

So, mixed fraction = $2\frac{2}{3}$

e. $\frac{54}{5}$

```
5) 54 (10
   – 5↓
     4
   – 0
     4
```

So, mixed fraction = $10\frac{4}{5}$

f. $\frac{80}{7}$

```
7) 80 (11
   – 7↓
    10
   – 7
     3
```

So, mixed fraction = $11\frac{3}{7}$

g. $\frac{44}{5}$

```
5) 44 (8
   – 40
     4
```

So, mixed fraction = $8\frac{4}{5}$

h. $\frac{15}{7}$

```
7) 15 (2
   – 14
     1
```

So, mixed fraction = $2\frac{1}{7}$

i. $\frac{17}{2}$

```
2) 17 (8
   – 16
     1
```

So, mixed fraction = $8\frac{1}{2}$

j. $\frac{92}{11}$

```
11) 92 (8
    – 88
      4
```

So, mixed fraction = $8\frac{4}{11}$

3. Convert the following mixed fractions into improper fractions :

Ans. a. $4\frac{7}{9}$

$= \frac{4 \times 9 + 7}{9}$

$= \frac{36 + 7}{9} = \frac{43}{9}$

b. $3\frac{3}{5}$

$= \frac{3 \times 5 + 3}{5}$

$= \frac{15 + 3}{5} = \frac{18}{5}$

c. $6\frac{5}{8}$

$= \frac{6 \times 8 + 5}{8}$

$= \frac{48 + 5}{8} = \frac{53}{8}$

d. $3\frac{3}{7}$

$= \frac{7 \times 3 + 3}{7}$

$= \frac{21 + 3}{7} = \frac{24}{7}$

e. $11\frac{2}{3}$

$= \frac{11 \times 3 + 2}{3}$

$= \frac{33 + 2}{3} = \frac{35}{3}$

f. $4\frac{1}{2}$

$= \frac{4 \times 2 + 1}{2}$

$= \frac{8 + 1}{2} = \frac{9}{2}$

g. $\mathbf{2\frac{1}{9}}$

$= \frac{2 \times 9 + 1}{9}$

$= \frac{18 + 1}{9} = \frac{19}{9}$

h. $\mathbf{2\frac{2}{7}}$

$= \frac{2 \times 7 + 2}{7}$

$= \frac{14 + 2}{7} = \frac{16}{7}$

i. $\mathbf{2\frac{2}{5}}$

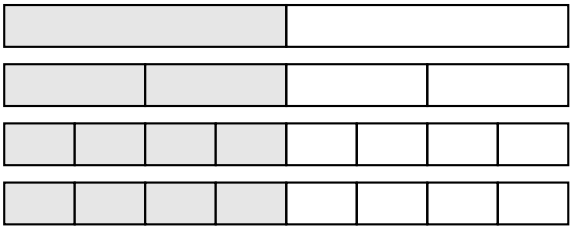
$= \frac{2 \times 5 + 2}{5}$

$= \frac{10 + 2}{5} = \frac{12}{5}$

j. $\mathbf{8\frac{3}{4}}$

$= \frac{8 \times 4 + 3}{4} = \frac{32 + 3}{4} = \frac{35}{4}$

4.



$\frac{1}{2}$

$\frac{2}{4}$

$\frac{4}{8}$

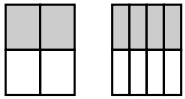
$\frac{8}{16}$

Now fill up the boxes using <, > or =.

$\frac{1}{2}$ $\boxed{=}$ $\frac{2}{4}$ $\boxed{=}$ $\frac{4}{8}$ $\boxed{=}$ $\frac{8}{16}$

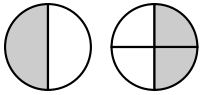
5. Study the shaded regions and fill in the blanks :

a.



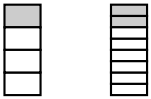
$\frac{1}{2} = \frac{\boxed{4}}{8}$

b.



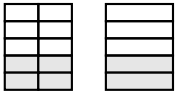
$\frac{1}{2} = \frac{\boxed{2}}{4}$

c.



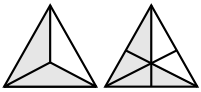
$\frac{1}{4} = \frac{\boxed{2}}{8}$

d.



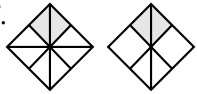
$\frac{4}{10} = \frac{2}{\boxed{5}}$

e.



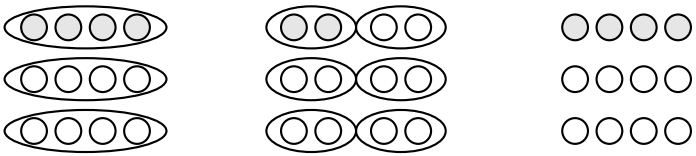
$\frac{2}{3} = \frac{4}{\boxed{6}}$

f.



$\frac{2}{8} = \frac{1}{\boxed{4}}$

6.



Colour $\frac{1}{3}$ Colour $\frac{2}{6}$ Colour $\frac{4}{12}$

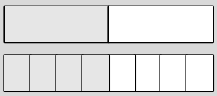
Put in the sings in (<, >, or =) the boxes to show what you observe.

$\frac{1}{3}$ $\boxed{=}$ $\frac{2}{6}$ $\boxed{=}$ $\frac{4}{12}$

Mental Maths

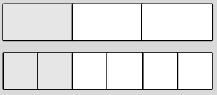
Shade the two diagrams in such a way that they show equivalent fractions. Write the fraction in the boxes.

Ans. a.



$\frac{1}{2}$ and $\frac{4}{8}$ are equivalent.

b.



$\frac{1}{3}$ and $\frac{2}{6}$ are equivalent.

Equivalent Fractions and Lowest Terms

Exercise 7 (b)

1. Complete the following :

Ans. a. $\frac{2}{3} = \frac{10}{15}$ b. $\frac{1}{6} = \frac{7}{42}$ c. $\frac{7}{22} = \frac{35}{110}$

d. $\frac{6}{17} = \frac{12}{34}$ e. $\frac{8}{9} = \frac{24}{27}$ f. $\frac{11}{50} = \frac{44}{200}$

2. Write the first three equivalent fractions of the following :

Ans. a. $\mathbf{\frac{1}{9}} = \frac{1}{9}, \frac{2}{18}, \frac{3}{27}, \frac{4}{36}$ b. $\mathbf{\frac{3}{5}} = \frac{3}{5}, \frac{6}{10}, \frac{9}{15}, \frac{12}{20}$

c. $\mathbf{\frac{2}{7}} = \frac{2}{7}, \frac{4}{14}, \frac{6}{21}, \frac{8}{28}$ d. $\mathbf{\frac{4}{11}} = \frac{4}{11}, \frac{8}{22}, \frac{12}{33}, \frac{16}{44}$

e. $\mathbf{\frac{7}{10}} = \frac{7}{10}, \frac{14}{20}, \frac{21}{30}, \frac{28}{40}$ f. $\mathbf{\frac{5}{6}} = \frac{5}{6}, \frac{10}{12}, \frac{15}{18}, \frac{20}{24}$

3. Write an equivalent fraction of $\frac{5}{7}$ with :

Ans. a. **numerator = 20**

$\frac{5}{7} = \frac{20}{\square}$

$5 \times \square = 7 \times 20$

$\square = \frac{7 \times 20}{5}$

$\boxed{\square = 28}$

So, $\frac{5}{7} = \frac{20}{28}$

b. **denominator = 21**

$\frac{5}{7} = \frac{\square}{21}$

$5 \times 21 = 7 \times \square$

$\square = \frac{5 \times 21}{7}$

$\boxed{\square = 15}$

So, $\frac{5}{7} = \frac{15}{21}$

c. **numerator = 25**

$\frac{5}{7} = \frac{25}{\square}$

$5 \times \square = 7 \times 25$

$\square = \frac{7 \times 25}{5}$

$\boxed{\square = 35}$

So, $\frac{5}{7} = \frac{25}{35}$

4. Check whether the following pairs of fractions are equivalent or not :

Ans. a. $\frac{3}{4}$, $\frac{9}{12}$

$\frac{3}{4} \times \frac{9}{12}$

Since, 36 = 36

So, $\frac{3}{4} = \frac{9}{12}$

b. $\frac{7}{9}$, $\frac{21}{36}$

$\frac{7}{9} \times \frac{21}{36}$

Since, 252 > 189

So, $\frac{7}{9} > \frac{21}{36}$

c. $\frac{2}{3}$, $\frac{12}{18}$

$\frac{2}{3} \times \frac{12}{18}$

Since, 36 = 36

So, $\frac{2}{3} = \frac{12}{18}$

d. $\frac{4}{9}$, $\frac{32}{63}$

$\frac{4}{9} \times \frac{32}{63}$

Since, 252 < 288

So, $\frac{4}{9} < \frac{32}{63}$

e. $\frac{2}{7}$, $\frac{18}{28}$

$\frac{2}{7} \times \frac{18}{28}$

Since, 56 < 126

So, $\frac{2}{7} < \frac{18}{28}$

f. $\frac{5}{6}$, $\frac{20}{24}$

$\frac{5}{6} \times \frac{20}{24}$

Since, 120 = 120

So, $\frac{5}{6} = \frac{20}{24}$

5. Reduce the following fractions to the lowest terms

Ans. To Reduce the fractions in the lowest terms, we must divide both numerator and denominator by their HCF.

a. $\mathbf{\frac{24}{32}}$ $= \frac{24 \div 8}{32 \div 8} = \frac{3}{4}$

b. $\mathbf{\frac{6}{24}}$ $= \frac{6 \div 6}{24 \div 6} = \frac{1}{4}$

c. $\mathbf{\frac{30}{45}}$ $= \frac{30 \div 15}{45 \div 15} = \frac{2}{3}$

d. $\mathbf{\frac{16}{18}}$ $= \frac{16 \div 2}{18 \div 2} = \frac{8}{9}$

e. $\mathbf{\frac{42}{48}}$ $= \frac{42 \div 6}{48 \div 6} = \frac{7}{8}$

f. $\mathbf{\frac{85}{100}}$ $= \frac{85 \div 5}{100 \div 5} = \frac{17}{20}$

g. $\mathbf{\frac{25}{40}}$ $= \frac{25 \div 5}{40 \div 5} = \frac{5}{8}$

h. $\mathbf{\frac{15}{30}}$ $= \frac{15 \div 15}{30 \div 15} = \frac{1}{2}$

i. $\mathbf{\frac{49}{63}}$ $= \frac{49 \div 7}{63 \div 7} = \frac{7}{9}$

j. $\mathbf{\frac{36}{81}}$ $= \frac{36 \div 9}{81 \div 9} = \frac{4}{9}$

k. $\mathbf{\frac{22}{121}}$ $= \frac{22 \div 11}{121 \div 11} = \frac{2}{11}$

l. $\mathbf{\frac{75}{80}}$ $= \frac{75 \div 5}{80 \div 5} = \frac{15}{16}$

Order of Fractions

Exercise 7 (c)

1. Use > < or = :

Ans. a. $\frac{5}{7} > \frac{3}{7}$ b. $1\frac{3}{11} < 2\frac{5}{11}$ c. $\frac{4}{3} > \frac{4}{5}$ d. $\frac{11}{12} > \frac{10}{12}$

e. $\frac{1}{12} < \frac{1}{6}$ f. $\frac{5}{9} < \frac{20}{23}$ g. $\frac{16}{5} < \frac{18}{3}$ h. $\frac{2}{7} > \frac{2}{11}$

2. Circle the greatest and cross the smallest fraction in the following.

Ans. a. $\frac{5}{12}$, $\frac{8}{12}$, $\frac{6}{12}$, $\frac{9}{12}$ b. $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{2}$, $\frac{1}{5}$ c. $3\frac{1}{4}$, $8\frac{3}{4}$, $3\frac{4}{5}$, $6\frac{2}{5}$

d. $2\frac{1}{7}$, $3\frac{2}{7}$, $4\frac{1}{7}$, $1\frac{2}{7}$ e. $4\frac{1}{3}$, $\frac{15}{3}$, $3\frac{1}{3}$, $\frac{23}{3}$ f. $9\frac{2}{3}$, $7\frac{5}{6}$, $4\frac{1}{3}$, $3\frac{7}{8}$

3. Arrange in ascending order :

Ans. a. $\mathbf{\frac{2}{7}}$, $\mathbf{\frac{4}{7}}$, $\mathbf{\frac{6}{7}}$, $\mathbf{\frac{3}{7}}$

There are like fractions.
Since $2 < 3 < 4 < 6$

So, ascending order $= \frac{2}{7}, \frac{3}{7}, \frac{4}{7}, \frac{6}{7}$

b. $\mathbf{\frac{2}{5}}$, $\mathbf{\frac{7}{6}}$, $\mathbf{\frac{6}{5}}$, $\mathbf{\frac{4}{7}}$

5	5, 6, 5, 7
6	1, 6, 1, 7
	1, 1, 1, 7

L. C. M. of 5, 6, 5, 7
So, LCM $= 5 \times 6 \times 7 = 210$
Now, by doing same denominator, we have

$$\frac{2}{5} = \frac{2 \times 42}{5 \times 42} = \frac{84}{210} \qquad \frac{7}{6} = \frac{7 \times 35}{6 \times 35} = \frac{245}{210}$$

$$\frac{6}{5} = \frac{6 \times 42}{5 \times 42} = \frac{252}{210} \qquad \frac{4}{7} = \frac{4 \times 30}{7 \times 30} = \frac{120}{210}$$

Since : $84 < 120 < 245 < 252$

So, $\frac{2}{5} < \frac{4}{7} < \frac{7}{6} < \frac{6}{5}$ is ascending form.

c. $\mathbf{6\frac{2}{7}}$, $\mathbf{3\frac{1}{7}}$, $\mathbf{5\frac{5}{7}}$, $\mathbf{2\frac{4}{7}}$

$\frac{44}{7}$, $\frac{22}{7}$, $\frac{40}{7}$, $\frac{18}{7}$

Since $18 < 22 < 40 < 44$

So, ascending order is $2\frac{4}{7} < 3\frac{1}{7} < 5\frac{5}{7} < 6\frac{2}{7}$

d. $\mathbf{7\frac{3}{11}}$, $\mathbf{\frac{8}{13}}$, $\mathbf{2\frac{5}{13}}$, $\mathbf{\frac{9}{11}}$

$\frac{80}{11}$, $\frac{8}{13}$, $\frac{31}{13}$, $\frac{9}{11}$

11	11, 13, 13, 11
13	1, 13, 13, 1
	1, 1, 1, 1

LCM of 11, 13, 13, 11

$= 11 \times 13 = 143$

Now, by doing same denominator, we have

$\frac{80}{11} = \frac{80 \times 13}{11 \times 13} = \frac{1040}{143}$ $\quad$ $\frac{8}{13} = \frac{8 \times 11}{13 \times 11} = \frac{88}{143}$

$\frac{31}{13} = \frac{31 \times 11}{13 \times 11} = \frac{341}{143}$ $\quad$ $\frac{9}{11} = \frac{9 \times 13}{11 \times 13} = \frac{117}{143}$

Since, $88 < 117 < 341 < 1040$

So, ascending order is $\frac{8}{13} < \frac{9}{11} < \frac{31}{13} < \frac{80}{11}$

or $\frac{8}{13} < \frac{9}{11} < 2\frac{5}{13} < 7\frac{3}{11}$ form.

e. $\mathbf{7\frac{8}{6}}$, $\mathbf{7\frac{15}{19}}$, $\mathbf{7\frac{13}{19}}$, $\mathbf{8\frac{5}{6}}$

$\frac{50}{6}$, $\frac{148}{19}$, $\frac{146}{19}$, $\frac{53}{6}$

6	6, 19, 19, 6
19	1, 19, 19, 1
	1, 1, 1, 1

LCM of 6, 19, 19, 6

$= 6 \times 19 = 114$

Now, by doing same denominator, we have

$\frac{50}{6} = \frac{50 \times 19}{6 \times 19} = \frac{950}{114}$ $\quad$ $\frac{148}{19} = \frac{148 \times 6}{19 \times 6} = \frac{888}{114}$

$\frac{146}{19} = \frac{146 \times 6}{19 \times 6} = \frac{876}{114}$ $\quad$ $\frac{53}{6} = \frac{53 \times 19}{6 \times 19} = \frac{1007}{114}$

Since, $876 < 888 < 950 < 1007$

So, ascending order is $\frac{146}{19} < \frac{148}{19} < \frac{50}{6} < \frac{53}{6}$

or $7\frac{13}{19} < 7\frac{15}{19} < 7\frac{9}{6} < 8\frac{5}{6}$ form.

f. $\mathbf{2\frac{6}{15}, 4\frac{11}{15}, 7\frac{12}{15}, 7\frac{3}{15}}$

$\frac{36}{15}, \frac{71}{15}, \frac{47}{5}, \frac{38}{5}$

Since, 36 < 71 < 108 < 117

So, ascending order is $\frac{36}{15} < \frac{71}{15} < \frac{108}{15} < \frac{117}{15}$

or $2\frac{6}{15} < 4\frac{11}{15} < 7\frac{3}{5} < 7\frac{12}{5}$ form.

4. Arrange in descending order :

Ans. a. $\mathbf{\frac{1}{9}, \frac{2}{9}, \frac{7}{9}, \frac{5}{9}}$

These are like fractions.
Since, 7 > 5 > 2 > 1

So, descending order is $\frac{7}{9} > \frac{5}{9} > \frac{2}{9} > \frac{1}{9}$

b. $\mathbf{\frac{8}{13}, \frac{12}{13}, \frac{11}{13}, \frac{6}{13}}$

These are like fractions.
Since, 12 > 11 > 8 > 6

So, descending order is $\frac{12}{13} > \frac{11}{13} > \frac{8}{13} > \frac{6}{13}$

c. $\mathbf{\frac{3}{11}, \frac{4}{9}, \frac{1}{9}, \frac{2}{11}}$

3	11, 9, 9, 11
3	11, 3, 3, 11
11	11, 1, 1, 11
	1, 1, 1, 1

LCM of 11, 9, 9, 11 = 11 × 3 × 3 = 99

Now, by doing denominator same.

$\frac{3}{11} = \frac{3 \times 9}{11 \times 9} = \frac{27}{99}$ $\qquad$ $\frac{4}{9} = \frac{4 \times 11}{9 \times 11} = \frac{44}{99}$

$\frac{1}{9} = \frac{1 \times 11}{9 \times 11} = \frac{11}{99}$ $\qquad$ $\frac{2}{11} = \frac{2 \times 9}{11 \times 9} = \frac{18}{99}$

Since, 44 > 27 > 18 > 11

So, descending order = $\frac{4}{9} > \frac{3}{11} > \frac{2}{11} > \frac{1}{9}$

d. $\mathbf{2\frac{4}{9}}$, $\mathbf{5\frac{7}{10}}$, $\mathbf{10\frac{7}{9}}$, $\mathbf{6\frac{9}{10}}$

$\frac{22}{9}$, $\frac{57}{10}$, $\frac{97}{9}$, $\frac{69}{10}$

9	9, 10, 9, 10
10	1, 10, 1, 10
	1, 1, 1, 1

LCM of 9, 10, 9, 10

$= 9 \times 10 = 90$

Now, by doing denominator same.

$$\frac{22}{9} = \frac{22 \times 10}{9 \times 10} = \frac{220}{90} \qquad \frac{57}{10} = \frac{57 \times 9}{10 \times 9} = \frac{513}{90}$$

$$\frac{97}{9} = \frac{97 \times 10}{9 \times 10} = \frac{970}{90} \qquad \frac{69}{10} = \frac{69 \times 9}{10 \times 9} = \frac{621}{90}$$

Since, 970 > 621 > 513 > 220

So, $\frac{97}{9} > \frac{69}{10} > \frac{57}{10} > \frac{22}{9}$

So, descending order $= 10\frac{7}{9} > 6\frac{9}{10} > 5\frac{7}{10} > 2\frac{4}{9}$

e. $\mathbf{4\frac{3}{11}}$, $\mathbf{\frac{29}{6}}$, $\mathbf{3\frac{5}{6}}$, $\mathbf{\frac{9}{11}}$

$\frac{47}{11}$, $\frac{29}{6}$, $\frac{23}{6}$, $\frac{9}{11}$

LCM of 11, 6, 6, 11

$= 6 \times 11 = 66$

Now, by doing denominator same.

$$\frac{47}{11} = \frac{47 \times 6}{11 \times 6} = \frac{282}{66} \qquad \frac{29}{6} = \frac{29 \times 11}{6 \times 11} = \frac{319}{66}$$

$$\frac{23}{6} = \frac{23 \times 11}{6 \times 11} = \frac{253}{66} \qquad \frac{9}{11} = \frac{9 \times 6}{11 \times 6} = \frac{54}{66}$$

Since, 319 > 282 > 253 > 54

So, $\frac{29}{6} > \frac{47}{11} > \frac{23}{6} > \frac{9}{11}$

So, descending order $= \frac{29}{6} < 4\frac{3}{11} < 3\frac{5}{6} < \frac{9}{11}$

f. $\mathbf{9\frac{5}{7}, 9\frac{7}{11}, 9\frac{10}{7}, 9\frac{8}{7}}$

$\frac{68}{7}, \frac{106}{11}, \frac{73}{7}, \frac{71}{7}$

7	7, 11, 7, 7
11	1, 11, 1, 1
	1, 1, 1, 1

LCM of 7, 11, 7, 7

$= 7 \times 11 = 77$

Now, by doing denominator same.

$\frac{68}{7} = \frac{68 \times 11}{7 \times 11} = \frac{748}{77}$ $\quad$ $\frac{106}{11} = \frac{106 \times 7}{11 \times 7} = \frac{742}{77}$

$\frac{73}{7} = \frac{73 \times 11}{7 \times 11} = \frac{803}{77}$ $\quad$ $\frac{71}{7} = \frac{71 \times 11}{7 \times 11} = \frac{781}{77}$

Since, 803 > 781 > 748 > 742

So, $\frac{73}{7} > \frac{71}{7} > \frac{68}{7} > \frac{106}{11}$

So, descending order $= 9\frac{10}{7} > 9\frac{8}{7} > 9\frac{5}{7} > 9\frac{7}{11}$

Fun with Maths

Ans. 1. Vinay had stones = 100

Sister got $= \frac{1}{4}$ of 100 $= \frac{100}{4} = 25$

Hence, sister got 25 stones.

Rest with vinay = 100 – 25 = **75**

2. Rohan got $= \frac{1}{3}$ of the remaining

$= \frac{1}{3}$ of 75 $= \frac{1}{3} \times 75 = 25$

Hence, Rohan got 2 5stones.

Now, Rest with Vinay =75 – 25 = 50

3. Lalit got $= \frac{1}{2}$ of remaining

$= \frac{1}{2}$ of 50 $= \frac{1}{2} \times 50 = 25$

Hence, Lalit got 25 stones.

Now, Rest with Vinay = 50 – 25 = 25

4. Vinay kept 25 stones with him.

Ad;dition and Subtraction of Like Fraction

Exercise 7 (d)

1. Find the sum :

Ans. a. $2\frac{5}{9} + 3\frac{3}{9}$

$= \frac{23}{9} + \frac{30}{9} = \frac{23 + 30}{9} = \frac{53}{9}$

b. $\frac{1}{12} + \frac{7}{12}$

$= \frac{1 + 7}{12} = \frac{8}{12} = \frac{2}{3}$

c. $\frac{13}{19} + \frac{5}{19}$

$= \frac{13 + 5}{19} = \frac{18}{19}$

d. $\frac{5}{21} + \frac{10}{21}$

$= \frac{5 + 10}{21} = \frac{15}{21} = \frac{5}{7}$

e. $\frac{7}{16} + \frac{5}{16}$

$= \frac{7 + 5}{16} = \frac{12}{16} = \frac{3}{4}$

f. $1\frac{4}{11} + 1\frac{5}{11}$

$= \frac{15}{11} + \frac{16}{11} = \frac{15 + 16}{11} = \frac{31}{11}$

g. $\frac{1}{17} + \frac{3}{17}$

$= \frac{1 + 3}{17} = \frac{4}{17}$

h. $\frac{3}{10} + \frac{4}{10}$

$= \frac{3 + 4}{10} = \frac{7}{10}$

i. $\frac{1}{10} + \frac{3}{10} + \frac{2}{10}$

$= \frac{1 + 3 + 2}{10} = \frac{6}{10} = \frac{3}{5}$

j. $\frac{5}{14} + \frac{7}{14} + \frac{1}{14}$

$= \frac{5 + 7 + 1}{14} = \frac{13}{14}$

k. $\frac{3}{7} + \frac{6}{7} + \frac{2}{7}$

$= \frac{3+6+2}{7} = \frac{11}{7}$

l. $\frac{7}{24} + \frac{5}{24} + \frac{6}{24}$

$= \frac{7+5+6}{24} = \frac{18}{24} = \frac{3}{4}$

2. Subtract :

Ans. a. $\frac{3}{11} - \frac{2}{11}$

$= \frac{3-2}{11} = \frac{1}{11}$

b. $\frac{8}{18} - \frac{3}{18}$

$= \frac{8-3}{18} = \frac{5}{18}$

c. $\frac{17}{15} - \frac{13}{15}$

$= \frac{17-13}{15} = \frac{4}{15}$

d. $\frac{16}{31} - \frac{12}{31}$

$= \frac{16-12}{31} = \frac{4}{31}$

e. $\frac{21}{23} - \frac{10}{23}$

$= \frac{21-10}{23} = \frac{11}{23}$

f. $\frac{5}{17} - \frac{3}{17}$

$= \frac{5-3}{17} = \frac{2}{17}$

g. $\frac{11}{14} - \frac{7}{14}$

$= \frac{11-7}{14} = \frac{4}{14} = \frac{2}{7}$

h. $\frac{15}{24} - \frac{7}{24}$

$= \frac{15-7}{24} = \frac{8}{24} = \frac{1}{3}$

i. $3\frac{3}{5} - 1\frac{4}{5}$

$= \frac{18}{5} - \frac{9}{5} = \frac{18-9}{5} = \frac{9}{5}$

j. $1\frac{8}{10} - 1\frac{1}{10}$

$= \frac{18}{10} - \frac{11}{10} = \frac{18-11}{10} = \frac{7}{10}$

k. $3\frac{4}{5} - 1\frac{2}{5}$

$= \frac{19}{5} - \frac{7}{5} = \frac{19-7}{5} = \frac{12}{5}$

l. $\mathbf{2\frac{5}{4} - \frac{1}{4}}$

$= \frac{13}{4} - \frac{1}{4} = \frac{13-1}{4} = \frac{12}{4} = 3$

Addition and Subtraction of Unlike Fractions

Exercise 7 (e)

1. Add the following :

Ans. a. $\mathbf{\frac{1}{4} + \frac{4}{9}}$

$= \frac{9 + 4 \times 4}{36}$, LCM of 4 and 9 = 36 $= \frac{9 + 16}{36} = \frac{25}{36}$

b. $\mathbf{\frac{1}{9} + \frac{1}{8}}$

$= \frac{8 + 9}{72}$, LCM of 9 and 8 = 72 $= \frac{17}{72}$

c. $\mathbf{\frac{4}{5} + \frac{1}{2}}$

$= \frac{4 \times 2 + 5}{10}$, LCM of 5 and 2 = 10 $= \frac{8 + 5}{10} = \frac{13}{10}$

d. $\mathbf{\frac{1}{3} + \frac{1}{6}}$

$= \frac{2 + 1}{6}$, LCM of 3 and 6 = 6 = $\frac{3}{6} = \frac{1}{2}$

e. $\mathbf{2\frac{1}{7} + 7\frac{1}{2}}$

$= \frac{15}{7} + \frac{15}{2}$, LCM of 7 and 2 = 14 $= \frac{15 \times 2 + 15 \times 7}{14}$

$= \frac{30 + 105}{14} = \frac{135}{14}$

f. $\mathbf{4\frac{1}{5} + 4\frac{1}{3}}$

$= \frac{21}{5} + \frac{13}{3}$, LCM of 5 and 3 = 15 $= \frac{21 \times 3 + 13 \times 5}{15}$

$= \frac{63 + 65}{15} = \frac{128}{15}$

g. $\mathbf{4\frac{1}{6} + 2\frac{1}{4}}$

$= \frac{25}{6} + \frac{9}{4}$, LCM of 6 and 4 = 12 = $\frac{25 \times 2 + 9 \times 3}{12}$

$= \frac{50 + 57}{24} = \frac{77}{12}$

h. $\mathbf{1\frac{2}{3} + 6\frac{1}{2}}$

$= \frac{5}{3} + \frac{13}{2}$, LCM of 3 and 2 = 6 $= \frac{5 \times 2 + 13 \times 3}{6}$

$= \frac{10 + 39}{6} = \frac{49}{6}$

2. Subtract the following :

Ans. a. $\mathbf{\frac{1}{3} - \frac{2}{7}}$

$= \frac{7 - 2 \times 3}{21}$, LCM of 3 and 7 = 21 = $\frac{7 - 6}{21} = \frac{1}{21}$

b. $\mathbf{\frac{2}{3} - \frac{4}{8}}$

$= \frac{2 \times 8 - 3 \times 4}{24}$, LCM of 3 and 8 = 24 = $\frac{16 - 12}{24} = \frac{4}{24} = \frac{1}{6}$

c. $\mathbf{\frac{5}{7} - \frac{1}{4}}$

$= \frac{20 - 7}{28}$, LCM of 7 and 4 = 28 = $\frac{13}{28}$

d. $\mathbf{\frac{1}{2} - \frac{1}{6}}$

$= \frac{6 - 2}{12}$, LCM of 2 and 6 = 6 = $\frac{4}{12} = \frac{1}{3}$

e. $\mathbf{10\frac{1}{3} - 7\frac{4}{6}}$

$= \frac{31}{3} - \frac{46}{6}$, LCM of 3 and 6 = 6 = $\frac{31 \times 2 - 46 \times 1}{6}$

$= \frac{62 - 46}{6} = \frac{16}{6} = \frac{8}{3}$

f. $\mathbf{9\frac{1}{2} - 8\frac{3}{5}}$

$= \frac{19}{2} - \frac{43}{5}$, LCM of 2 and 5 = 10 $= \frac{19 \times 5 - 43 \times 2}{10}$

$= \frac{95 - 86}{10} = \frac{9}{10}$

g. $\mathbf{6\frac{1}{2} - 3\frac{2}{5}}$

$= \frac{13}{2} - \frac{17}{5}$, LCM of 2 and 5 = 10 $= \frac{13 \times 5 - 17 \times 2}{10}$

$= \frac{65 - 34}{10} = \frac{31}{10}$

h. $\mathbf{3\frac{1}{2} - 1\frac{3}{4}}$

$= \frac{7}{2} - \frac{7}{4}$, LCM of 2 and 4 = 4 $= \frac{7 \times 2 - 7 \times 1}{4}$

$= \frac{14 - 7}{4} = \frac{7}{4}$

Word Problems

Exercise 7 (f)

1. Milk in I vessels $= \frac{1}{4}$ litre

Milk in II vessels $= \frac{3}{8}$ litre

Milk in III vessels $= \frac{9}{16}$ litre

Total milk in three vessels $= \left(\frac{1}{4} + \frac{3}{8} + \frac{9}{16}\right)$ litre

= \ (LCM of 4, 8 and 16 = 16)

$\left(\frac{1 \times 4 + 3 \times 2 + 9 \times 1}{16}\right)$ litre

$= \left(\frac{4 + 6 + 9}{16}\right) = \frac{19}{16}$ L $= 1\frac{3}{16}$ L

2. Mrs kumar bought sugar $= \frac{3}{4}$ kg

She used sugar $= \frac{1}{4}$ kg

Sugar left over with her $= \frac{3}{4}$ kg $- \frac{1}{4}$ kg

$= \frac{3-1}{4}$ kg $= \frac{2}{4}$ kg $= \frac{1}{2}$ kg

3. John bought ribbon $= \frac{2}{5}$ m

Jack bought ribbon $= \frac{1}{5}$ m

Since, $\frac{2}{5} > \frac{1}{5}$

So, John bought longer ribbon than jack $= \frac{2}{5} - \frac{1}{5}$

$= \frac{2-1}{5} = \frac{1}{5}$ m

So, John bought $\frac{1}{5}$ m longer ribbon than Jack.

4. Nishant spent on foot $= \frac{1}{3}$

He spent on dresses $= \frac{1}{3}$

So, total fraction he spent $= \frac{1}{3} + \frac{1}{3}$

$= \frac{1+1}{3} = \frac{2}{3}$

5. Kriti completed her English homework in $= \frac{1}{5}$ hrs

Kriti completed her Mathematics homework in $= \frac{3}{5}$ hrs

Total time taken by her $= \frac{1}{5} + \frac{3}{5} = \frac{1+3}{5} = \frac{4}{5}$ hrs

6. Ritika travelled by car $= \frac{2}{3}$

Ritika travelled by train $= \frac{1}{3}$

More distance travelled by Ritika in car $= \frac{2}{3} - \frac{1}{3}$

$= \frac{2-1}{3} = \frac{1}{3}$

MCQs

Choose the correct option.

Ans. 1. a 2. c 3. a 4. a

Fun with Maths

Ans. Do it yourself.

Chapter

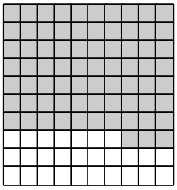
8 Decimals

Introduction to Decimals

Exercise 8 (a)

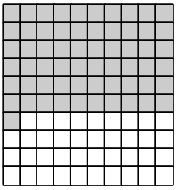
1. Shade the squares to represent the given decimal fractions :

Ans. a.



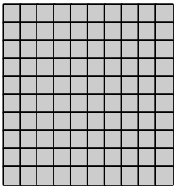
0.73

b.



0.61

c.



1.00

2. Write the decimal fraction for the following :

Ans. a. 0.33 b. 1.00 c. 1.32

3. Write the following decimals in words :

Ans. a. Eight point six four b. One point six five

c. Zero point zero zero four

d. Nineteen point one zero three e. Zero point one four

f. Three hundred eighty-four point one eight five

4. Write the numerals :

Ans. a. 2.3 b. 5.38 c. 1.63 d. 45.35

5. Write in expanded form :

Ans. a. **19.45** = $10 + 9 + \frac{4}{10} + \frac{5}{100}$

b. **1.085** = $1 + \frac{8}{100} + \frac{5}{1000}$

c. **92.105** = $90 + 2 + \frac{1}{10} + \frac{5}{1000}$

d. **651.075** = $600 + 50 + 1 + \frac{7}{100} + \frac{5}{1000}$

e. **8.001** = $8 + \frac{1}{1000}$

f. **62.62** = $60 + 2 + \frac{6}{10} + \frac{2}{100}$

g. **101.256** = $100 + 1 + \frac{2}{10} + \frac{5}{100} + \frac{6}{1000}$

h. **111.207** = $100 + 10 + 1 + \frac{2}{10} + \frac{7}{1000}$

3. Write the following decimals in words :

Ans. a. Eight point six four b. One point six five
c. Zero point zero zero four
d. Nineteen point one zero three e. Zero point one four
f. Three hundred eighty-four point one eight five

6. Write as a decimal number :

Ans. a. 4.7 b. 5.08 c. 6.009
d. 77.07 e. 42.4 f. 56.007
g. 53.6 h. 913.007 i. 67.097

Converting Decimals Fractions

Exercise 8 (b)

1. Convert the following decimal numbers to fractions.

Ans. a. **0.87** $= \frac{87}{100}$

b. **0.775** $= \frac{775}{1000} = \frac{31}{40}$

c. **0.005** $= \frac{5}{1000} = \frac{1}{200}$

d. **21.005** $= \frac{21005}{1000} = \frac{4201}{200}$

e. **8.95** $= \frac{895}{100} = \frac{179}{20}$

f. **34.025** $= \frac{34025}{1000} = \frac{1361}{40}$

g. **1.09** $= \frac{109}{100}$

h. **2.601** $= \frac{2601}{1000}$

2. Convert the following fractions as decimals.

Ans. a. 0.6 b. 0.9 c. 0.83 d. 0.003
e. 3.2 f. 7.804 g. 3.4 h. 2.9

HOTS

Match the fractions and the decimals by colouring alike. Remember that the fractions are in their lowest terms.

Ans.

	G	Y		W	B	O	R	
	0.50	0.25		0.40	0.75	0.66	0.08	
$\frac{2}{25}$			$\frac{3}{4}$	$\frac{1}{2}$		$\frac{33}{50}$	$\frac{1}{4}$	$\frac{2}{5}$
R			**B**	**G**		**O**	**Y**	**W**

MCQs

Choose the correct option.

Ans. 1. c 2. a 3. c 4. c

Mathematics Fun

Solve and colour the correct balloon.

Ans.

7 hundredths =

$2 + \frac{3}{10}$ =

$8 + \frac{7}{10} + \frac{5}{100}$ =

Nine and nine hundredths =

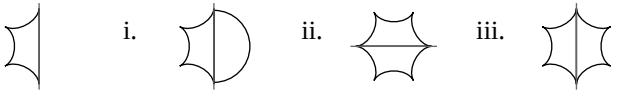
Chapter

9 Symmetry and Patterns

Mental Maths

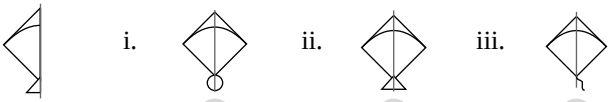
Tick (3) the correct shape which you will get after completing the halves :

Ans. a.



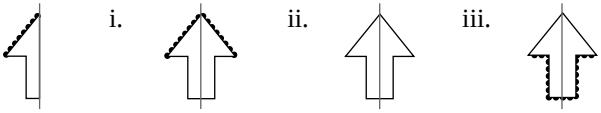
i. ii. iii. ✓

b.



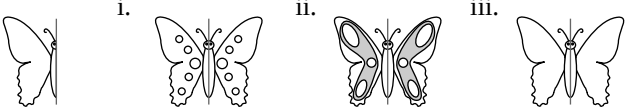
i. ii. ✓ iii.

c.



i. ✓ ii. iii.

d.



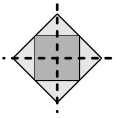
i. ii. iii. ✓

Mental Maths

Draw the lines of symmetry in the following :

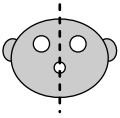
Ans. a.

b.



c.

d.



Exercise 9 (a)

1. Which of the following figures are symmetrical?

a. 3

b. 7

c. 3

d. 7

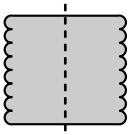
e. 3

f. 7

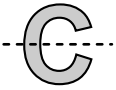
2. Draw the line of symmetry in the following figures.

Ans. a.

b.

c. 

d.

e. 

f.

3. Complete the figures along their line of symmetry.

Ans. Do it yourself.

Exercise 9 (b)

1. Mark a tick for the figures that are examples of reflections :

Ans. a. 3

b. 7

c. 7

d. 3

e. 3

f. 3

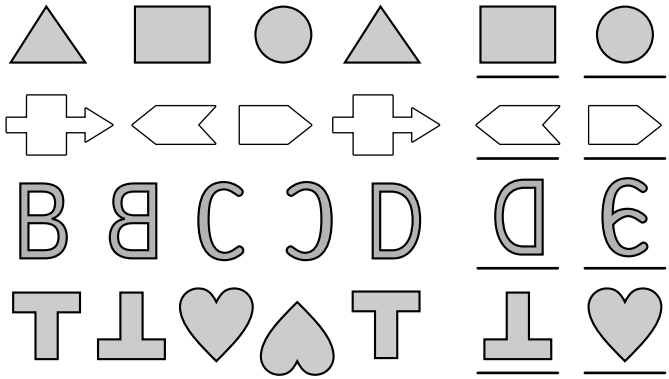
2. Draw the figures whose reflections are given below.

Ans. Do it yourself.

Exercise 9 (c)

1. Complete the patterns.

Ans. a.



2. Complete these geometrical patterns.

a.

b.

c.

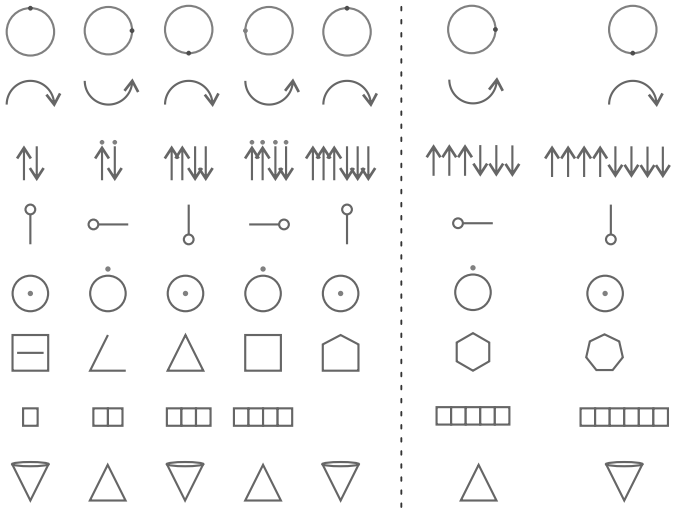
d.

e.

f.

g.

h.



3. Write the next three terms in each patterns.

Ans. a. A1, B2, C3, D4, **E5**, **F6**, **G7**; What will be the last term? **Z26**

b. 99, 89, 79, 69, **59**, **49**, **39**

c. 13, 25, 37, 49, **61**, **73**, **85**

d. 16, 14, 12, 10, **8**, **6**, **4**

e. 150, 145, 140, 135, **130**, **125**, **120**

4. Observe the patterns and fill in the blanks.

Ans. a.
$(2 \times 2) - (1 \times 1) = 2 + 1$
$(3 \times 3) - (2 \times 2) = 3 + 2$
$(4 \times 4) - (3 \times 3) = 4 + 3$
$(5 \times 5) - (4 \times 4) = \mathbf{5 + 4}$
$(6 \times 6) - (5 \times 5) = \mathbf{6 + 5}$
$(7 \times 7) - (6 \times 6) = \mathbf{7 + 6}$

b.
$15873 \times 7 \times 1 = 111111$
$15873 \times 7 \times 2 = \mathbf{222222}$
$15873 \times 7 \times 3 = 333333$
$15873 \times 7 \times 4 = 444444$
$15873 \times 7 \times 5 = \mathbf{555555}$
$\mathbf{15873} \times 7 \times 6 = 666666$

4. The rules for these patterns consist of two steps-work them out and write the next three terms.

Ans. a. 1, 4, 13, 40, **121**, **364**, **1093** (Hint : The rule is × 3 + 1)

b. 2,3, 5, 9 **17**, **33**, **65** (Hint : The rule is × 2 – 1)

c. 0, 3, 12, 39, **120**, **363**, **1092** (Hint : Add 1 and then multiply by a number)

d. 1, 2, 5, 14, **41**, **122**, **365** (Hint : Multiply by 3 and then subtract a number)

Coding and Decoding

Exercise 9 (d)

1. Read the message using the first code above.

Ans. a. WELL DONE

b. SAY NO TO POLYTHENE

2. Read the message using the second code.

Ans. a. 18 5 19 16 5 3 20 25 15 21 18 5 12 4 5 18 19

b. 19 1 22 5 14 1 20 21 18 5

MCQs

Choose the correct option.

Ans. 1. a 2. b 3. a 4. b

5. a 6. b 7. a 8. b

Fun with Maths

Use the following codes to decode the message and find what Mohit want to say his friend Gautam.

Ans.

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
Z	Y	X	W	V	U	T	S	R	Q	P	O	N	M	L	K	J	I	H	G	F	E	D	C	B	A

Dear Gautam

DV DROO NVVG ZGUREV
L XOLXP RM GSV KZIP.
WE WILL MEET AT FIVE
O'CLOCK IN THE PARK.

Chapter

10 Metric Measures

Mental Maths

Guess and match the columns :

Ans.

Column A	**Column B**
a.	i. 100 kg
b.	ii. 1500 kg
c.	iii. 5 g
d.	iv. 100 g
e.	v. 250 g

Mental Maths

Fill in the blanks.

Ans. a. 4.5 km = **4500** m

b. $\frac{8}{25}$ km = **320** m

c. $5\frac{1}{4}$ km = **5250** m

d. $9\frac{1}{2}$ km = **9500** m

Conversion of Units of Length

Exercise 10 (a)

1. Convert into metres :

Ans. a. **9 km**
= 9 × 1000 m
= 9000 m

b. **13 km**
= 13 × 1000 m
= 13000 m

c. **8 km 705 m**
= (8 × 1000 m + 705) m
= 8000 m + 705 m
= 8705 m

2. Convert into centimetres :

Ans. a. **7 m**
= 7 × 100 cm
= 700 cm

b. **12 m**
= 12 × 100
= 1200 cm

c. **3 m 14 cm**
= 3 × 100 + 14
= 300 + 14
= 314 cm

d. **7 m 50 cm**
= (7 × 100 + 50) cm
= 700 + 50
= 750 cm

e. **8 m 8 cm**
= 8 × 100 + 8
= 800 + 8
= 808 cm

f. **2 m 22 cm**
= 2 × 100 + 22
= 200 + 22
= 222 cm

g. **7 m 75 cm**
= 7 × 100 + 75
= 700 + 75
= 775 cm

h. **2 m 14 cm**
= 2 × 100 + 14
= 200 + 14
= 214 cm

3. Convert into metres and centimetres :

Ans. a. **425 cm**
= (400 + 25) cm
= 400 cm + 25 cm
= 4 m 25 cm

b. **920 cm**
= (900 + 20) cm
= 900 c + 20 cm
= 9 m 20 cm

c. **412 cm**
= (400 + 12) cm
= 400 + 12 cm
= 4 m 12 cm

d. **501 cm**
= (500 + 1) cm
= 500 cm + 1 cm
= 5 m 1 cm

e. **385 cm**
= (385 + 85) cm
= 300 cm + 85 cm
= 3 m 85 cm

f. **4005 cm**
= (4000 + 5) cm
= 4000 cm + 5 cm
= 40 m 5 cm

g. **810 cm**
= (800 + 10) cm
= 800 cm + 10 cm
= 8 m 10 cm

h. **705 cm**
= (700 + 5) cm
= 700 cm + 5 cm
= 7 m 5 cm

d. **$3\frac{1}{2}$ km**

$\frac{7}{2}$ km

$\frac{7}{2} \times 1000$ m

7×500 m

3500 m

e. **6 km 295 m**

= $(6 \times 1000 + 295)$ m

= $(6000 + 295)$ m

= 6295 m

f. **7 km 125 m**

= $(7 \times 1000 + 125)$ m

= $(7000 + 125)$ m

= 7125 m

g. **9 km 25 m**

= $(9 \times 1000 + 25)$ m

= $(9000 + 25)$ m

= 9025 m

h. **$7\frac{1}{2}$ km**

$\frac{15}{2}$ km

$\frac{15}{2} \times 1000$ m

15×500 m

7500 m

4. Convert into kilometres and metres :

Ans. a. **6175 m**

= $(6000 + 175)$ m

= 6000 m + 175 m

= 6 km 175 m

b. **8000 m**

= $(8000 \div 1000)$ m

= 8 m

c. **2950 m**

= 2000 m + 950 m

= 2 km 950 m

d. **1805 m**

= 1000 m + 805 m

= 1 km 805 m

e. **8050 m**

= 8000 m + 50 m

= 8 km 50 m

f. **4246 m**

= 4000 m + 246 m

= 4 km 246 m

g. **1084 m**

= $(1000 + 84)$ m

= 1000 m + 84 m

= 1 km 84 m

h. **7025 m**

= 7000 m + 25 m

= 7 km 25 m

5. Convert into following as directed :

Ans. a. **61 cm 9 mm into mm**

= 61 × 10 + 9 mm

= (610 + 9) mm

= 619 mm

b. **12 dm 5 cm into cm**

= (12 × 10 + 5) cm

= (120 + 5) cm

= 125 cm

c. **50 mm into cm**

$= \frac{50}{10}$ cm

= 5 cm

d. **921 dm into m**

= 921 m = (920 + 1) dm

= 920 dm + 1 dm

= 92 m 1 dm

= 92 m 1 dm

Measuring Weight (Mass)

Exercise 10 (b)

1. Convert the following into g :

Ans. a. **8 kg**

= 8 × 1000 g

= 8000 g

b. **17 kg**

= 17 × 1000 g

= 17000 g

c. **7 kg 256 g**

= 7 × 1000 g + 250 g

= 7000 g + 256 g

= 7256 g

d. **15 kg 15 g**

= 15 × 1000 g + 15 g

= 15000 g + 15 g

= 15015 g

e. **9 kg 279 g**

= 9 × 1000 g + 279 g

= 9000 g + 279 g

= 9279 g

f. **4 kg 15 g**

= 4 × 1000 g + 15 g

= 4000 g + 15 g

= 4015 g

g. **11 kg 9 g**

= 11 × 1000 g + 9 g

= 11000 g + 9 g

= 11009 g

h. **6 kg 75 g**

= 6 × 1000 g + 75 g

= 6000 g + 75 g

= 6075 g

2. Convert the following into mg :

Ans. a. **19 g**

= 19 × 1000 mg

= 19000 mg

b. **9 g**

= 9 × 1000 mg

= 9000 mg

c. **5 g 25 mg**

= 5 × 1000 mg + 25 mg

= 5000 mg + 25 mg

= 5025 mg

d. **82 g 82 mg**

= 82 × 1000 mg + 82 mg

= 82000 mg + 82 mg

= 82082 mg

e. **6 g 732 mg**
= 6 × 1000 mg + 732 mg
= 6000 mg + 732 mg
= 6732 mg

f. **3 g 58 mg**
= 3 × 1000 mg + 58 mg
= 3000 mg + 58 mg
= 3058 mg

g. **1 g 9 mg**
= 1 × 1000 mg + 9 mg
= 1000 mg + 9 mg
= 1009 mg

h. **3 g 408 mg**
= 3 × 1000 mg + 408 mg
= 3000 mg + 408 mg
= 3408 mg

3. Convert the following into kg :

Ans. a. **9000 g**
$= \frac{9000}{1000}$ kg
= 9 kg

b. **2387 g**
= 2000 g + 387 g
= 2 kg 387 g

c. **6700 g**
= 6000 g + 700 g
= 6 kg 700 g

d. **7849 g**
= 7000 g + 849 g
= 7 kg 849 g

e. **8080 g**
= 8000 g + 80 g
= 8 kg 80 g

f. **8008 g**
= 8000 g + 8 g
= 8 kg 8 g

g. **2075 g**
= 2000 g + 75 g
= 2 kg 75 g

h. **77008 g**
= 77000 g + 8 g
= 77 kg 8 g

4. Convert the following into g :

Ans. a. **6200 mg**
= 6000 mg + 200 mg
= 6 g 200 mg

b. **8000 mg**
$= \frac{8000}{1000}$ g
= 8 g

c. **3255 mg**
= 3000 mg + 255 mg
= 3 g 255 mg

d. **4500 mg**
= 4000 mg + 500 mg
= 4 g 500 mg

e. **7288 mg**
= 7000 mg + 288 mg
= 7 g 288 mg

f. **6018 mg**
= 6000 mg + 18 mg
= 6 g 18 mg

g. **27055 mg**
= 27000 mg + 55 mg
= 27 g 55 mg

h. **19265 mg**
= 19000 mg + 265 mg
= 19 g 265 mg

Exercise 10 (c)

1. Convert into L.

Ans. a. **6 kL**
= 6 × 1000 L
= 6000 L

b. **15 kL**
= 15 × 1000 L
= 15000 L

c. **7 kl 265 L**
= 7 × 1000 L + 265 L
= 7000 L + 265 L
= 7265 L

d. **8 kL 8 L**
= 8 × 1000 L + 8 L
= 8000 L + 8 L
= 8008 L

e. **25 kL 70 L**
= 25 × 1000 L + 70 L
= 25000 L + 70 L
= 25070 L

f. **4 kL 70 L**
= 4 × 1000 L + 70 L
= 4000 L + 70 L
= 4070 L

g. **18 kL 1 L**
= 18 × 1000 L + 1 L
= 18000 L + 1 L
= 18001 L

h. **6 kL90 L**
= 6 × 1000 L + 90 L
= 6000 L + 90 L
= 6090 L

2. Convert into mL.

Ans. a. **6 L**
= 6 × 1000 mL
= 6000 mL

b. **17 L**
= 17 × 1000 mL
= 17000 mL

c. **10 L 450 mL**
= 10 × 1000 mL + 450 mL
= 10000 mL + 450 mL
= 10450 mL

d. **2 L 970 mL**
= 2 × 1000 mL + 970 mL
= 2000 mL + 970 mL
= 2970 mL

e. **7 L 270 mL**
= 7 × 1000 mL + 270 mL
= 7000 mL + 270 mL
= 7270 mL

f. **3 L 15 mL**
= 3 × 1000 mL + 15 mL
= 3000 mL + 15 mL
= 3015 mL

g. **1 L 4 mL**
= 1 × 1000 mL + 4 mL
= 1000 mL + 4 mL
= 1004 mL

h. **15 L 55 mL**
= 15 × 1000 mL + 55 mL
= 15000 mL + 55 mL
= 15055 mL

3. Convert into kL.

Ans. a. **62000 L**

$= \frac{62000}{1000}$ kL

= 62 kL

b. **7280 L**

= 7000 L + 280 L

= 7 kL 280 L

c. **15255 L**

= 15000 L + 255 L

= 15 kL 255 L

d. **17056 L**

= 17000 L + 56 L

= 17 KL + 56 L

= 17 K L 56 L

Addition and Subtraction of Metric Measures

Exercise 10 (d)

1. Add :

Ans. a.

	km	m
	42	175
+	69	675
	111	850

b.

	m	cm
	15	25
+	8	65
	23	90

c.

	kg	g
	75	250
+	62	127
	137	377

d.

	kg	g
	54	672
+	67	372
	122	44

e.

	g	mg
	8	030
	19	705
+	30	475
	58	210

f.

	L	mL
	8	455
+	16	285
	24	740

g.

	L	mL
	33	333
+	66	666
	99	999

h.

	m	cm
	18	30
		16
+	5	10
	23	56

2. Subtract :

Ans. a.

	m	cm
	92	66
–	88	46
	4	20

b.

	km	m
	72	700
–	66	825
	5	875

c.

	kg	g
	32	100
–	17	400
	14	700

d.

	kg	g
	81	350
–	73	450
	7	900

e.

g	mg
38	400
– 27	875
10	525

f.

L	mL
88	672
– 74	900
13	772

g.

L	mL
10	250
– 5	650
4	600

h.

km	m
40	000
– 35	675
4	325

Exercise 10 (e)

Solve the following :

Ans. 1. Mr. Kumar travelld by car = 5 km 250 m
Mr. Kumar travelld by bus = 3 km 450 m
Mr. Kumar travelld by walk = + 600 m
Total distance travelled = **9 km 300 m**

So, he travelled 9 km 300 m in all.

2. Weight of potatoes = 2 kg 400 g
Weight of tomatoes = + 1 kg 550 g
Total weight of vegetables = **3 kg 950 g**

Mrs Ansari bought total 3 kg, 950 g vegetables.

3. Juice in a pack = 2 L 500 mL
Komal drank Juice = – 750 mL
Juice left in back = **1 L 750 mL**

So, There is 1 L 750 mL Juice left in a pack.

4. Length of red ribbon= 30 m 50 cm
Gautami used ribbon = – 18 m 75 cm
Left ribbon = **11 m 75 cm**

So, 11m 75cm length of the ribbon.

5. Shopkeeper bought mangoes = 9 kg 500 g
He sold mangoes = – 4 kg 750 g
left mangoes = **4 kg 750 g**

So, He had 4 kg 750 g mangoes left with him.

6. Orange squash = 12 L 250 mL
Lemon squash = 16 L 300 mL

Pineapple squash	=	+ 10 L 000 mL
Total quality of squash	=	**38 L 550 mL**

So, total 38 L 550 mL squash were made is Nisha's Mother.

MCQs

Choose the correct option.

Ans. 1. c 2. a 3. c 4. a

Project

Ans. Do it yourself.

Chapter

11 Money

4 friends wants to buy exercise books which costs `375.50. They are counting their money. Help them to count the money.

Ans.

2 notes of ` 20
3 notes of ` 10
5 notes of ` 5
Total money = `95

6 notes of ` 20
1 coin of ` 5
6 coins of ` 2
Total money = `137

2 notes of ` 50
1 note of ` 10
8 coins of ` 1
Total money = `118

4 notes of ` 10
8 coins of ` 2
1 note of ` 50
Total money = `106

Now answer the following questions.

Ans. a. `456 b. Yes c. `80.50

Addition and subtraction of Money

Exercise 11 (a)

1. Write the amount :

Ans. a. ` 6.00 b. ` 25.00 c. ` 130
d. ` 150 e. ` 100

2. Convert as directed.

Ans. a. ` 6 = **600** p b. ` 32.25 = **3225** p c. ` 7.05 = **705** p
d. 600 p = ` **6** e. 1545 p = ` **15.45** f. 575 p = ` **5.75**

3. Add the following :

Ans. a.

	`22.57
+	`62.68
	`85.25

b.

	`641.79
+	`191.81
	`833.60

c.

	`781.11
+	`321.23
	`521.59
	`1623.93

d.

	`207.91
+	`130.21
	` 97.65
	`435.77

4. Subtract the following :

Ans. a.

	`71.50
–	`21.06
	`50.44

b.

	`205.45
–	`145.30
	` 60.15

c.

	`847.91
–	`691.21
	`156.70

d.

	`498.70
–	`211.20
	`287.50

5. Solve :

Ans. a.

The cost of a packet of crayons	=	` 45.50
Cost of a book	=	` 60.75
Cost of water bottle	=	+ ` 135.95
Total cost	=	` **242.20**

So, The total cost of these things is `242.20.

b.

The cost of a spring roll	=	` 110.00
The cost of pizza	=	– ` 90.00
So, difference	=	` **20.00**

So, There is `20.00 difference in their costs

c.

Rajiv bought a shirt for	=	` 400.50
He bought a table lamp	=	` 212.75
He bought a pen stand	=	+ ` 095.20
Total money he spent	=	` **708.45**

He gave the shopkeeper = ` 1000 Note
So, shopkeeper returned him = ` 1000 – 708.45
= ` 291.55

Multiplication and division of Money

Exercise 11 (b)

1. Find the product :

Ans. a. **`9.12 × 6**

```
  `9.12
     ×6
 `5472
```

b. **`81.42 × 9**

```
  `81.42
      ×9
 `732.78
```

c. **`17.06 × 25**

```
  `17.06
     ×25
    8530
   3412×
 `426.50
```

d. **`37.48 × 42**

```
  `37.48
     ×42
    7496
  14992×
`1574.16
```

e. **`70.48 × 23**

```
  `70.48
     ×23
   21144
  14096×
`1621.04
```

f. **`9.95 × 34**

```
  `17.06
     ×25
    8530
   3412×
 `426.50
```

2. Divide :

Ans. a. **`260.44 by 4**

```
4) 260.44 (65.11
 – 24
    20
  – 20
       4
     – 4
         4
       – 4
         0
```

Thus, 260.44 ÷ 4 = `65.11

b. **`518.25 by 5**

```
5) 518.25 (103.65
 – 5
    18
  – 15
     32
   – 30
      25
    – 25
       0
```

Thus, 518.25 ÷ 5 = `103.65

c. **`4,106.92 by 2**

```
2) 4106.92 (2053.46
 – 4
    10
  – 10
       6
     – 6
         9
       – 8
         12
       – 12
          0
```

Thus, `4106.92 ÷ 2 = `2053.46

d. **`937.44 by 3**

```
3) 937.44 (312.48
 – 9
    3
  – 3
    7
  – 6
   14
 – 12
   24
 – 24
    0
```

Thus, `937.44 ÷ 3 = `312.48

e. **`7,127.33 by 7**

```
7) 7127.33 (1018.19
 – 7
   12
  – 7
   57
 – 56
   13
  –  7
   63
 – 63
    0
```

Thus, `7127.33 ÷ 7 = `1018.19

f. **`3,364.80 by 16**

```
16) 3364.80 (210.30
  – 32
     16
   – 16
      48
    – 48
       0
     – 0
       0
```

Thus, 3364.80 ÷ 16 = `210.30

g. **`3,889.20 by 12**

```
12) 3889.20 (324.10
  – 36
     28
   – 24
     49
   – 48
     12
   – 12
      0
    – 0
      0
```

Thus, `3889.20 ÷ 12 = `324.10

h. **`9,223.92 by 9**

```
9) 9223.92 (1024.88
 – 9
   22
  – 18
   43
 – 36
   79
 – 72
   72
 – 72
    0
```

Thus, `9223.92 ÷ 9 = `1024.88

i. **`343.20 by 11**

```
11) 343.20 (31.20
  – 33
    13
  – 11
     22
   – 22
      0
    – 0
      0
```

Thus, `343.20 ÷ 11 = `31.20

3. Solve the following story problems.

Ans. a. Price of a chocolate = ` 16.15

Ria bought chocolates = ×3

Total amount = **` 48.45**

So, she had to pay `48.45 for 3 chocolates.

b. Cost of 25 packets chips = ` 300
Cost of 1 packet chips = ` 300 ÷ 25
So, cost of each packet = ` 12

```
25)300(12
  -25
   50
  -50
    0
```

c. Cost of 1 kg of guava = ` 13.50
Cost of 35 kg of guava = ` 13.50 × 35
So, the cost of 35 kg of guava = `472.50.

```
 `13.50
   ×35
  6750
 4050×
`472.50
```

Bill Price List

Exercise 11 (c)

1. For each bill shown below a 1000-rupee note was given to the shopkeeper. Find the amount returned in each case.

Ans. a.

Bill	
Lunch box	` 196.75
Books	` 272.40
Towels	` 304.50
Total	` 773.65

Amount paid = ` 1000
Amount returned = ` (1000 – 773.65)
= ` 226.35

b.

Bill	
Pens	` 208.75
Notebooks	` 106.40
Calculators	` 282.95
School bag	` 195.70
Total	` 793.80

Amount paid = ` 1000
Amount returned = ` (1000 – – 793.80
= ` 206.20

2. Vandana went to a cosmetic product shop and buys 1 comb, 2 m ribbon, 6 clips and 2 hair pins. Complete the bill.

Ans.

S. No.	Item	Quantity	Rate	Cost (`)
1.	Comb	1	12.75	**12.75**
2.	Ribbon	2 m	5.00	**10.00**
3.	Clips	6	10.50	**63.00**
4.	Hair pins	2	7.00	**14.00**
			Total =	**99.75**

3. Look at the price list given alongside and prepare the bill for the following.

Ans. a.

S. No.	Item	Quantity	Rate	Cost (`)
1.	Ladies finger	$\frac{1}{2}$ kg	` 35.00/kg	**17.50**
2.	Potatoes	2 kg	` 20.00/kg	**40.00**
3.	Brinjals	1 kg	` 30.00/kg	**30.00**
			Total =	**87.50**

b.

S. No.	Item	Quantity	Rate	Cost (`)
1.	bottle guard	$\frac{1}{2}$ kg	` 25.00/kg	**12.50**
2.	tomatoes	2 kg	` 14/kg	**28.00**
3.	potatoes	1 kg	` 20/kg	**20.00**
4.	Brinjal	$\frac{1}{2}$ kg	` 30/kg	**15.00**
			Total =	**` 75.50**

MCQs

Choose the correct option.

Ans. 1. c 2. c 3. a 4. c

Project

Ans. Do it yourself.

Fun with Maths

Ans. Do it yourself.

Chapter 12 Geometry

Mental Maths

Fill in the blanks :

Ans. 1. A line has **indefinite** length.
2. A ray has **one** end point (s).
3. A line segment has **two** end points (s).
4. A **point** shows exact location or position.

Exercise 12 (a)

1. a. S Point b. $\overline{AB}$ Line segment c. $\overline{RP}$ Ray PR d. $\overleftrightarrow{ST}$ Line ST

1. Which of these represent a ray, a line segment and a line? Write down in symbols.

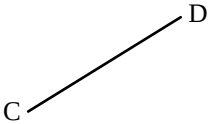
Ans. a. $\overline{QP}$ Line segment b. $\overrightarrow{LO}$ Ray c. $\overleftrightarrow{AB}$ Line

d. $\overleftrightarrow{AB}$ Line e. $\overrightarrow{AB}$ Ray f. $\overleftrightarrow{LD}$ Line

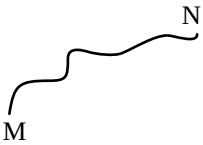
2. Observe the pictures carefully. Write the name of the following lines :

Ans. a.

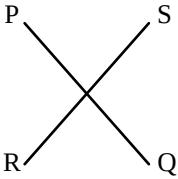
b.



c.

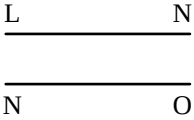


d.



e.

f.



4. Measure the following line segments.

Ans. Do it yourself.

5. Draw the line segments of the following lengths.

Ans. a. AB = 4.5 cm b. XY = 5.5 cm c. PQ = 5 cm

d. CD = 5 cm $7\frac{1}{2}$ cm

Angles

Exercise 12 (b)

1. Name the angles.

Ans. a. $\angle ABC$ b. $\angle LMN$ c. $\angle RST$

d. $\angle PQR$ e. $\angle ABC$ f. $\angle PQR$

2. Name the arms and vertex of the given angles.

Ans. a. Arms BC, CD b. Arms AQ, QB

Vertex C Vertex O

3. In the figure.

Ans. a. B b. G, D c. L, P

Open and Closed Figures

Exercise 12 (c)

1. Put a tick (3) for the closed figure and (7) for open figure.

Ans. a. 3 b. 3 c. 3 d. 7 e. 7 f. 3

2. Identify and colour the polygons among the following.

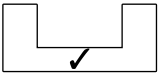
Ans. a.

b.
c.
d.
e.

f.

g.

h.

i. 

(3) Figures Colour keâj~

3. Name the following polygons.

Ans. a. Pentagon b. Hexagon
c. Square d. Triangle

Circle

Mental Maths

Fill in the radius or diameter as required.

Ans.

1.	Radius	=	18 cm,	Diameter	=	**36 cm**
2.	Radius	=	4.0 cm,	Diameter	=	**2.0 cm**
3.	Diameter	=	10 cm,	Radius	=	**8 cm**
4.	Diameter	=	11 cm,	Radius	=	**5.5 cm**

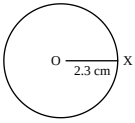
Exercise 12 (d)

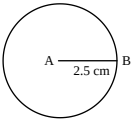
1. In the given circle, write names of :

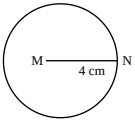
Ans. a. O b. OA, OX, OY
c. XY d. PQ, XY

2. Calculate radius for the given diameter in each case and draw circle also :

Ans. a. **d = 4.6 cm** b. **d = 5 cm** c. **d = 8 cm**





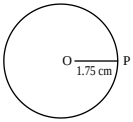


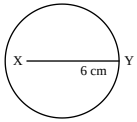
$r = \frac{d}{2}$ $\quad$ $r = \frac{d}{2}$ $\quad$ $r = \frac{d}{2}$

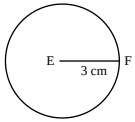
$= \frac{4.6}{2}$ $\quad$ $= \frac{5}{2}$ $\quad$ $= \frac{8}{2}$

$= 2.3$ cm $\quad$ $= 2.5$ cm $\quad$ $= 4$ cm

d. **d = 3 $\frac{1}{2}$ cm** $\quad$ e. **d = 12 cm** $\quad$ f. **d = 6 cm**







$r = \frac{d}{2}$ $\quad$ $r = \frac{d}{2}$ $\quad$ $r = \frac{d}{2}$

$r = \frac{7}{2}$ $\quad$ $= \frac{12}{2}$ $\quad$ $= \frac{6}{2}$

$r = \frac{7}{4}$ cm $= 1.75$ cm $\quad$ $= 6$ cm $\quad$ $= 3$ cm

3. Draw a circle for each of the following radius in your notebook and measure the diameter :

Ans. a. **r = 2 cm**
d = 2 × r
d = 2 × 2
d = 4 cm

b. **r = 4 cm**
d = 2 × r
d = 2 × 4
d = 8 cm

c. **r = 2.5 cm**
d = 2 × r
d = 2 × 2.5
d = 5.0 cm

d. **r = 5 cm**
d = 2 × r
d = 2 × 5 cm
d = 10 cm

e. **r = 5.5 cm**
d = 2 × r
d = 2 × 5.5 cm
d = 11 cm

f. **r = 3.5 cm**
d = 2 × r
d = 2 × 3.5
d = 7.0 cm

4. Write T for True and F for False :

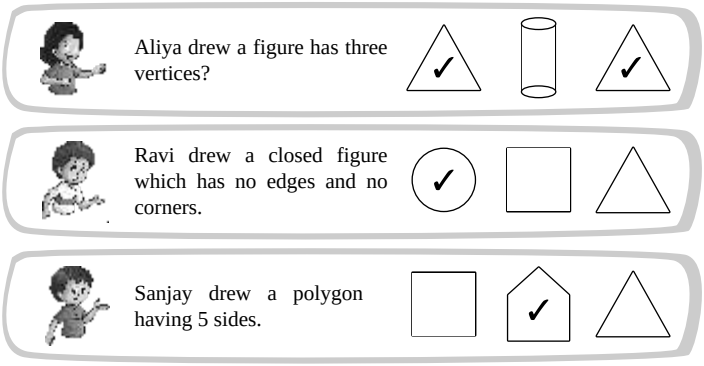
Ans. a. True $\quad$ b. False $\quad$ c. True $\quad$ d. True

Fun with Maths

Colour the correct picture which is drawn by each child.

Ans.

Teena drew a polygon having four equal sides.



MCQs

Choose the correct option.

Ans. 1. c 2. c 3. a 4. a

Chapter

13 Perimeter and Area

Exercise 13 (a)

1. Find the perimeter of the following figures :

Ans. Perimeter = sum of the length of each sides of given figure.

a. 27 m b. 60 m c. 38 cm d. 20 cm e. 24 cm f. 28 cm

2. Find the perimeter of the rectangles whose length and breadth are given below :

Ans. a. **l 22 cm, b = 18 cm**

Perimeter of rectangle = 2 (l + b) = 2 (22 + 18)
= 2 × 40 cm = 80 cm

b. **l = 32 cm, b = 25 cm**

Perimeter of rectangle = 2 (l + b) = 2 (32 + 25)
= 2 × 57 m = 114 m

c. **l = 35 m, b = 20 m**

Perimeter of rectangle = 2 (l + b) = 2 (35 + 20) m
= 2 × 55 m = 110 m

d. **1 = 16 m, b = 9 m**

Perimeter of rectangle = 2 (l + b) = 2 (16 + 9)
= 2 × 25 m = 50 m

3. Find the perimeter of square whose side is given below :

Ans. a. **8 cm** Side = 8 cm
Perimeter of Square = 4 × side
= 4 × 8 cm = 32 cm

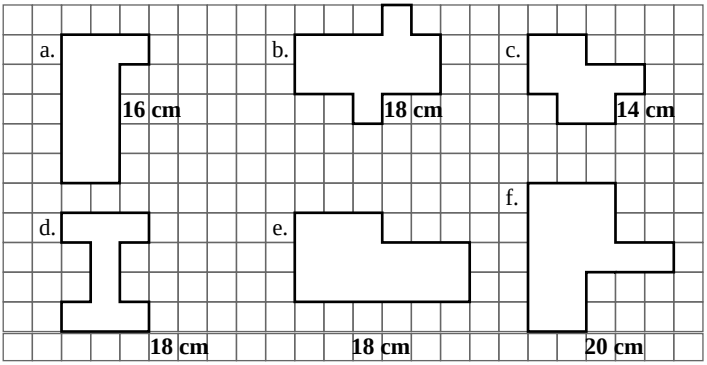
b. **16 cm** Side = 16 cm
Perimeter of Square = 4 × side
= 4 × 16 cm = 64 cm

c. **25 m** Side = 25 cm
Perimeter of Square = 4 × side
= 4 × 25 m = 100 m

d. **92 cm** Side = 92 cm
Perimeter of Square = 4 × side
= 4 × 92 cm = 368 cm

4. Find the perimeter of each figure. The side of each small square is 1 cm :

Ans.



5. Solve.

Ans. a. length = 25 m breadth = 17 m
Fence needed = perimeter of field
= 2 (l + b) = 2 × (25 + 17)
= 2 × 42 = 84 m
So, fence needed with the length of 84 m.

b. Side = 30 cm
Perimeter = 4 × side = 4 × 30 = 120 cm
or (100 + 20) cm
= 100 cm + 20 cm = 1 m 20 cm

c. length = 120 m breadth = 150 m
Distance = perimeter of park
= 2 (l + b) = 2 × (120 + 150)
= 2 × 270 = 540 m

d. length = 24 m breadth = 20 m
Perimeter = 2 (l + b) = 2 × (24 + 20)
= 2 × 44 = 88 m

HOTS

Ans. 50 m

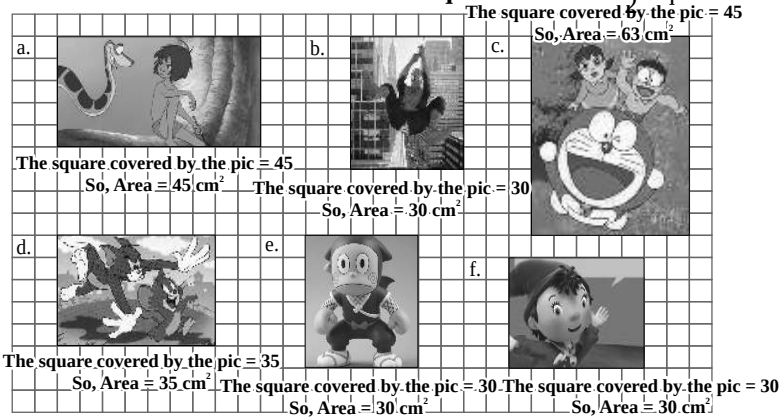
Area

Exercise 13 (b)

Finding Area of Regular shapes

1. Find the area and perimeter of these pictures of different cartoon characters. The side of each square is 1 cm : $\frac{1}{2}$ square

Ans.



Exercise 14 (c)

1. Calculate the area of these shapes in square unit. The side of each square is 1 unit.

Ans. a. Area of shape $= 15 + 3 \times \frac{1}{2} = 15 + 1\frac{1}{2}$

$= 16\frac{1}{2}$ square unit $= 16.5$ square unit

b. Area of shape $= 4 + 8 \times \frac{1}{2}$

$= 4 + 4 = 8$ square unit

c. Area of shape $= 6 + 2 \times \frac{1}{2}$

$= 6 + 1 = 7$ square unit

d. Area of shape $= 11 + 3 \times \frac{1}{2}$

$= 12\frac{1}{2}$ square unit $= 12.5$ square unit

e. Area of shape = 7 square + 4 square more than

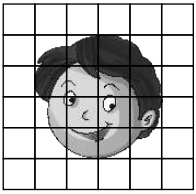
= 7 + 4 = 11 square unit

f. Area of shape = 10 full square + 2 more than half square

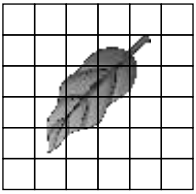
= 10 + 2 = 12 square unit

2. Find the area of the following.

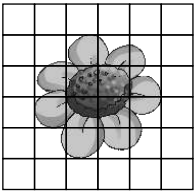
Ans.



11 square unit



4 square unit



12 square unit

Choose the correct option.

Ans. 1. a 2. b 3. a

Fun with Mathematics

Calculate the perimeter and area in square unit. The side of each square is 1 unit.

Ans. 1. Perimeter = 20
Area = 24

2. Perimeter = 18
Area = 20

3. Perimeter = 14
Area = 12

4. Perimeter = 16
Area = 16

5. Perimeter = 14
Area = 12

6. Perimeter = 12
Area = 9

Chapter

14 Time and Calendar

Exercise 14 (a)

1. Read and write the time in two ways :

Ans.
a. 7 : 10
10 minutes past 7

b. 6 : 17
17 minutes past 6

c. 10 : 22
22 minutes past 10

d. 9 : 36
24 minutes to 10

e. 4 : 50
10 minutes to 5

f. 10 : 11
11 minutes past 10

2. Draw the hands of the clocks to show the given time :

Ans.
a.
3 : 24

b.
9 : 08

c.
10 : 49

3. Write the time 2 hours before :

Ans.
a. 4 : 18 a.m.
b. 1 : 02 p.m.
c. 5 : 47 a.m.
d. 7 : 30 p.m.
e. 3 : 25 a.m.
f. 6 : 08 a.m.

4. Give the time 3 hours after :

Ans.
a. 8 : 40 a.m.
b. 9 : 30 p.m.
c. 2 : 00 a.m.
d. 3 : 04 p.m.
e. 11 : 15 a.m.
f. 12 : 00 noon

5. Match the following :

Column A **Column B**

a. 9 minutes after 10

b. 10 minutes before 9

c. 12 minutes after 5

d. 12 minutes before 5

Mental Maths

Ans. 1. Football match was start at 1440 hours.
The time in the 12 hour clock would be **2 : 40 p.m.**.

2. 4 : 15 p.m. in the 24 hours clock is **1615 hours**.

Exercise 14 (b)

1. Change the 12-hour clock time to 24-hour clock time :

Ans. a. **10 : 00 a.m.**
= 1000 hours

b. **8 : 20 p.m.**
= 820 + 1200
= 2020 hours

c. **11 : 00 a.m.**
= 1100 hours
=

d. **2 : 47 p.m.**
= 247 + 1200
= 1447 hours

e. **12 midnight**
= 1200 hours + 1200 hours
= 2400 hours or 0000 hours

f. **8 : 45 a.m.**
= 0845 hours

g. **3 : 15 a.m.**
= 0315 hours

h. **1 : 05 p,m.**
= 105 + 1200
= 1305 hours

2. Change the 24-hour clock time to 12-hour clock time :

Ans. a. **1115 hours**
= 11 : 15 a.m.

b. **0800 hours**
= 8 : 00 a.m.

c. **1640 hours**
= 1640 – 1200
= 440
= 4 : 40 p.m.

d. **2250 hours**
= 2250 – 1200
= 1050
= 10 : 50 p.m.

e. **1200 hours**
= 12 : 00 noon

f. **2340 hours**
= 2340 – 1200
= 1140
= 11 : 40 p.m.

g. **1320 hours**
= 1320 – 1200
= 120 = 1 : 20 p.m.

h. **0430 hours**
= 4 : 30 a.m.

Exercise 14 (c)

1. Convert the following into minutes :

Ans. a. **8 hours**
= 2 × 60 minutes
= 480 minutes

b. **7 hours**
= 7 × 60 minutes
= 420 minutes

c. **5 hours 20 minutes**
= (5 × 60 + 20) minutes
= (300 + 20) minutes
= 320 minutes

d. **3 hours 25 minutes**
= (3 × 60 + 25) minutes
= (180 + 25) minutes
= 205 minutes

e. **15 hours 6 minutes**
= (15 × 60 + 6) minutes
= (900 + 6) minutes
= 906 minutes

f. **6 hours 14 minutes**
= (6 × 60 + 14) minutes
= (360 + 14) minutes
= 374 minutes

2. Convert the following into seconds :

Ans. a. **5 minutes**
= 5 × 60 Seconds
= 300 Seconds

b. **17 minutes**
= 17 × 60 Seconds
= 1020 Seconds

c. **24 minutes**
= 24 × 60 Seconds
= 1440 Seconds

d. **10 minutes 17 seconds**
= 10 × 60 Seconds + 17 Seconds
= 600 Seconds + 17 Seconds
= 617 Seconds

e. **36 minutes 48 seconds**

= 36 × 60 + 48 Seconds

= 2160 + 48 Seconds = 2208 Seconds

f. **45 minutes**

= 45 × 60 seconds

= 2700 seconds

3. Convert the following into hours and minutes :

Ans. a. **325 minutes**

$= \frac{325}{60}$ hours

= 5 hours 25 minutes

```
60) 3 2 5 (5 hours
   – 3 0 0
     2 5  Minutes
```

b. **487 minutes**

$= \frac{487}{60}$ hours

= 8 hours 7 minutes

```
60) 4 8 7 (8 hours
   – 4 8 0
       7  Minutes
```

c. **156 minutes**

$= \frac{156}{60}$ hours

= 2 hours 36 minutes

```
60) 1 5 6 (2 hours
   – 1 2 0
     3 6  Minutes
```

d. **526 minutes**

$= \frac{526}{60}$ hours

= 8 hours 46 minutes

```
60) 5 2 6 (8 hours
   – 4 8 0
     4 6  Minutes
```

e. **1025 minutes**

$= \frac{1025}{60}$ hours

= 17 hours 05 minutes

```
60) 1 0 2 5 (17 Hours
   – 6 0 ↓ ↓
       4 2 5
     – 4 2 0
           5  Minutes
```

f. **1515 minutes**

$= \frac{1515}{60}$ hours

```
60) 1 5 1 5 (25 Hours
   – 1 2 0 ↓
       3 1 5
     – 3 0 0
         1 5  Minutes
```

= 25 hours 15 minutes

4. Convert the following into hours :

Ans. a. **10 days**
= 10 × 24 hours
= 240 hours

b. **6 days**
= 6 × 24 hours
= 144 hours

c. **5 days**
= 5 × 24 hours
= 120 hours

d. **9 days 20 hours**
= 9 × 24 hours + 20 hours
= 216 hours + 20 hours
= 236 hours

e. **10 days 10 hours**
= 10 × 24 hours + 10 hours
= 240 hours + 10 hours
= 250 hours

f. **5 days 15 hours**
= 5 × 24 hours + 15 hours
= 120 hours + 15 hours = 135 hours

5. Convert the following into days and hours :

Ans. a. **120 hours**

$= \frac{120}{24}$ days

= 5 days

```
24) 1 2 0 (5 days
   – 1 2 0
       0
```

b. **560 hours**

$= \frac{560}{24}$ days

= 23 days 8 hours

```
60) 5 6 0 (23 days
   – 4 8 ↓
      8 0
    – 7 2
        8  hours
```

c. **225 hours**

$= \frac{225}{24}$ days

= 9 days 9 hours

```
24) 2 2 5 (9 days
   – 2 1 6
       9  hours
```

d. **96 hours**

$= \frac{96}{24}$ days

= 4 days

```
24) 9 6 (4 days
   – 9 6
       0  hours
```

e. **325 hours**

$= \frac{325}{24}$ days

```
24) 3 2 5 (13 days
   – 2 4 ↓
      8 5
    – 7 2
      1 3  hours
```

= 13 days 13 hours

f. **310 hours**

$= \frac{310}{24}$ days

= 12 days 22 hours

```
24) 3 1 0 (12 days
   – 2 4 ↓
     7 0
   – 4 8
     2 2   hours
```

Addition and Subtraction of Time

Exercise 14 (d)

1. Add :

Ans. a.

hrs	min
4	15
+ 4	30
8 **hrs**	45 **min**

b.

hrs	min
1	
7	40
+ 9	25
18 **hrs**	05 **min**

c.

hrs	min
1	
3	20
+ 7	40
11 **hrs**	00 **min**

d.

hrs	min
1	
19	25
+ 13	50
33 **hrs**	15 **min**

e.

hrs	min
1	
12	45
+ 15	35
28 **hrs**	20 **min**

f.

hrs	min
16	00
+ 14	50
30 **hrs**	50 **min**

2. Subtract :

Ans. a.

hrs	min
9	70
10	10
– 6	25
3 **hrs**	45 **min**

b.

hrs	min
18	50
– 12	35
6 **hrs**	15 **min**

c.

hrs	min
7	45
– 4	20
3 **hrs**	25 **min**

d.

hrs	min
13	105
14	45
– 9	50
4 **hrs**	55 **min**

e.

hrs	min
20	100
21	40
– 13	55
7 **hrs**	45 **min**

f.

hrs	min
15	30
– 11	00
4 **hrs**	30 **min**

Duration of Time

Exercise 14 (e)

1. Find the duration of time from :

Ans. a. **7 : 15 a.m. to 11 : 45 a.m.**

	H Min
	11 : 45
–	7 : 15
	4 : 30

Starting time = 7 : 15 a.m.
Ending time = 11 : 45 a.m.
Duration of time = 11 : 45 – 7 : 15 a.m. = 4 : 30
or 4 hours 30 minutes.

b. **1615 hours to 2030 hours**

	Hours
	2030
–	1615
	415

Starting time = 1615 hours
Ending time = 2030 hours
Duration of time = (2030 – 1615) hours
= 415 hours
or 4 hours 15 minutes.

c. **1 : 15 p.m. to 2 : 00 p.m.**

	H Min
	1 60
	2 : 00
–	1 : 15
	0 : 45

Starting time = 1 : 15 p.m.
Ending time = 2 : 00 p.m.
Duration of time = 2 : 00 p.m. – 1 : 15 p.m.
= 0 : 45 min.
or 45 minutes.

d. **1230 hours to 0900 hours**

	3260
	3300
–	1230
	2031

Starting time = 1230 hours
Ending time = 0900 hours or
2400 + 900 = 3300 hours
Duration of time = (3300 – 1230) hours = 2030 hours
or 20 hours 30 minutes.

e. **10 : 30 a.m. to 5 : 30 p.m.**

	H Min
	17 : 30
–	10 : 30
	7 : 00

Starting time = 10 : 30 a.m.
or 10 : 30 hours
Ending time = 5 : 30 p.m.
or 17 : 30 hours
Duration of time = 17 : 30 – 10 : 30 = 7 : 00
7 hours 00 minutes.

2. Solve the following :

Ans. a. A vendor starts his round at = 10 : 20 a.m.
He returns at = 2 : 50 p.m. = 1450 hours
He takes time = 2 : 50 p.m. – 10 : 20 a.m.
= 1450 hours – 1020 hours

= 430 hours

or 4 hours 30 minutes.

b. Rajdhani Express reached mumbai at = 9 : 30 a.m.

The Howrah mail had reached mumbai 3 hours 45 min before

So it reached mumbai = 9 : 30 – 3 hours 45 minutes

= 5 : 45 a.m.

H	Min
8	90
9	30
– 3	45
5	45

c. Renu reached the school at = 8 : 30 a.m.

Rohan has reached 45 minutes after her.

So, Rohan reached school = 8 : 30 + 45 min

8 : 75 = 9 : 15 a.m.

So, Rohan reached school at 9 : 15 a.m.

H	Min
8	30
+ 0	45
8	75
9	15

d. Vikas reached to me at = 6 : 30 p.m.

Nitin had reached 2 hours 45 minutes, Earlier than Vikas

So, Nitin reached home at 6 : 30 p.m. – 2 : 45 p.m.

= 3 : 45 p.m.

So, Jatin had reached at home 3 : 45 p.m.

H	Min
5	90
6	30
– 2	45
3	45

e. Savita goes to school at = 8 : 20 a.m.

and returns at = 3 : 30 p.m.

duration of time = 3 : 30 p.m. – 8 : 20 a.m.

= (1530 – 0820) hours = 0710 hours

or 7 hours 10 minutes.

So, she 7 hours 10 minutes is living away from home

Calendar

Exercise 14 (f)

1. Which of the following are leap years ?

Ans. a. **2006** b. **2004**

```
4) 1982 (501
  – 16 ↓
     38
   – 36 ↓
     22
    – 22
       2
```

```
4) 2004 (501
  – 20 ↓
      0
    – 0 ↓
      4
    – 4
      0
```

1982 is not exactly divisible by 4.
So, 2006 is not a leap year.

c. **2029**

```
4)2029(507
 -20↓↓
    29
   -28
     1
```

2029 is not exactly divisible by 4.
So, 2029 is not a leap year.

e. **2012**

```
4)2012(503
 -20↓↓
    12
   -12
     0
```

2012 is exactly divisible by 4.
So, 2012 is a leap year.

g. **2010**

```
4)2010(502
 -20↓↓
    10
    -8
     2
```

2010 is not exactly divisible by 4.
So, 2010 is not a leap year.

2004 is exactly divisible by 4.
So, 2004 is a leap year.

d. **2032**

```
4)2032(508
 -20↓↓
    32
   -32
     0
```

2032 is exactly divisible by 4.
So, 2032 is a leap year.

f. **1624**

```
4)1624(488
 -16↓↓
    24
  -  24
     0
```

1624 is exactly divisible by 4.
So, 1624 is a leap year.

h. **1998**

```
4)1998(499
 -16↓|
    39|
  -36↓
    38
   -36
     2
```

1998 is not exactly divisible by 4.
So, 1998 is not a leap year.

2. Solve.

Ans. a. Mrs Gautam took a leave from = 14th April
Duration of leave = 35 days
So, she will rejoin her duty = 14th April + 35 days
= 19 May

b. Heena's family reached Lucknow
on the morning of = 19 October
They left shimla = 5 November
Duration of remaining in Lucknow = 19 Oct to 5 Nov
= 13 + 5 = 18 days

c. Meenu was on leave from = 10 May to 11 July
So, no. of days between = 22 + 30 + 11
= 63 days

Project

Ans. Do it yourself.

MCQs

Choose the correct option.

Ans. 1. a 2. c 3. b 4. b 5. c

Fund with maths

Write the time in 12-hour and 24-hour system.

Chapter

15 Data Handling

Data and Pictograph

Exercise 15 (a)

1. Organise the data in the table using Telly marks. Then, Answer the following questions:

Ans.

Name of animals	Tally marks	No. of animals
Elephant	𝍸 |	6
Lion	𝍸 ||	7
Deer	𝍸	5

Monkey	||||	4
Crane	||||	4
Crocodile	|||	3
	Total	29

a. 7 b. 3 c. Lion
d. Crocodile e. 29

2. The table given below shows the marks obtained by the 5 friends in a test.

Ans. Use 1 ⊕ = 5 marks

Name of students	Marks obtained
Aneek	⊕ ⊕ ⊕ ⊕ ⊕ ⊕ ⊕ ⊕ ⊕
Sarah	⊕ ⊕ ⊕ ⊕ ⊕ ⊕ ⊕ ⊕ ⊕
Vishakha	⊕ ⊕ ⊕ ⊕ ⊕
Manit	⊕ ⊕ ⊕ ⊕ ⊕ ⊕
Gurmeet	⊕ ⊕ ⊕ ⊕ ⊕ ⊕ ⊕ ⊕

Now, answer the questions given below.

a. Aneek b. Vishakha
c. 5 marks d. 190

3. The following pictograph shows the information regarding different vegetables grown in a garden.

Ans. Read the pictograph and answer the questions that follow :

a. 30 b. Lady finger
c. Bottle guard d. 130

4. The students of a school were surveyed regarding their hobby.

Ans Now, answer the following questions.

a. 50 students b. Playing cricket
c. 75 students d. 280 students

Project

Ans. Do it yourself.

Bar Graphs

Exercise 15 (b)

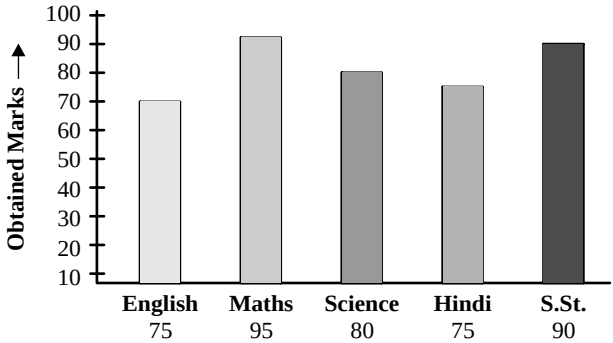
1. The bar graph given below shows the number of children in a locality who like different flavours of ice-cream. Read the bar graph and answer the questions that follow.

Ans. a. strawberry b. Butter scotch

c. 10 d. 76

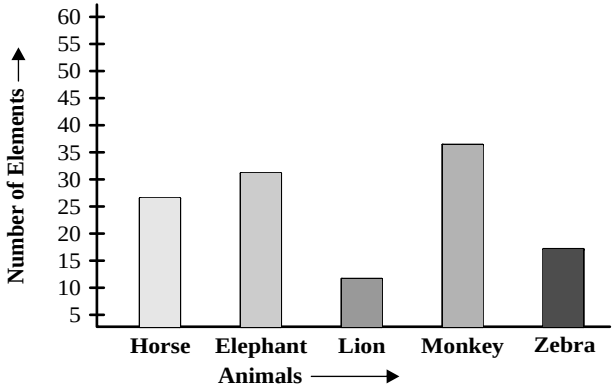
2. The list shows the marks obtained by Riya in different subjects. Prepare a bar graph to the given information.

Ans.



3. The list shows the number of animals in the zoo. Use the information to prepare a bar graph.

Ans.



Pie Charts

Exercise 15 (c)

1. Zeenat made a pie chart of favourite animal of children visiting the zoo. Look at the pie chart and mark True (T) or False (F) :

Ans. a. T b. T c. F d. F e. T

HOTS

Ans. 1. Miscellaneous 2. Rent

MCQs

Choose the correct option.

Ans. 1. c 2. b 3. a

Fun with Maths

Ans. Do it yourself.

Chapter

1 Large Numbers

Exercise 1 (a)

1. Make the number name according to the Indian system :

Ans. a. Thirteen lakh eighty-four thousand five hundred sixty- seven.

b. Five crore twenty-three lakh sixty thousand seven hundred five c. Sixty crore

d. Ninety-eight crore seventy lakh sixty-five thousand one hundred thirteen

2. Write the numerals for each of the following :

Ans.

	Number Name	Numeral
a.	Two crore seven lakh eight thousand sixty.	**20708060**
b.	Fifty-two crore fifty-two lakh fifty-two thousand five hundred twenty-five.	**525252525**
c.	Forty-two crore five lakh.	**420500000**
d.	Seventy crore seventy lakh seventy thousand seven hundred seven.	**707070707**
e.	Fifty crore fifty.	**500000050**
f.	Seventy-six crore.	**760000000**
g.	Ninety-five lakh two hundred seven.	**9500207**
h.	Nine crore nine lakh nine thousand nine.	**90909009**

3. Find the place value of coloured digits in the following :

Ans. a. The place value of 5 in 635397 = 5 thousands
= 5 × 1000 = 5000

b. The place value of 6 in 964837341 = 6 crores
= 6 × 10000000
= 60000000

c. The place value of 8 in 58232251 = 8 ten lakhs
= 8 × 1000000
= 8000000

d. The place value of 0 in 20535319 = 0

e. The place value of 7 in 200705955 = 7 × Laks
= 7 × 100000
= 700000

f. The place value of 5 in 70625697 = 5 thousands
= 5 × 1000 = 5000

4. Write the expanded form of the following numbers :

Ans. a. 65,56,475 = 6000000 + 500000 + 50000 + 6000 + 400 + 70 + 5

b. 3,35,17,987 = 30000000 + 3000000 + 500000 + 10000 + 7000 + 900 + 80 + 7

c. 55,82,181 = 5000000 + 500000 + 80000 + 2000 + 100 + 80 + 1

d. 71,12,630 = 7000000 + 100000 + 10000 + 2000 + 600 + 30

e. 16,78,45,631 = 100000000 + 60000000 + 7000000 + 800000 + 40000 + 5000 + 600 + 30 + 1

f. 28,35,17,893 = 200000000 + 80000000 + 3000000 + 500000 + 10000 + 7000 + 800 + 90 + 3

5. Find :

Ans. a. **3969049**

Place value of first 9	=	9
Place value of second 9	=	9000
Place value of third 9	=	+ 900000
Sum	=	**909009**

b. **78,63,6,275**

Place value of first 6	=	6000000
Place value of second 6	=	– 60000
Difference	=	**5940000**

c. **49,79,306**

Place value of 7	=	70000
Face value of 7	=	× 7
	=	**490000**

6. Write the following numbers in short form :

Ans.

S.No.	Expanded Form	Short Form
a.	90,00,000 + 7,00,000 + 50,000 + 3,000 + 40 + 9	9753049
b.	30,00,000 + 9,00,000 + 10,000 + 5,000 + 400 + 60 + 4	3915464
c.	8,00,00,000 + 70,00,000 + 9,00,000 + 50,000 + 4,000 + 300 + 20 + 7	87954327

d.	70,00,00,000 + 40,00,000 + 20,000 + 700 + 5	704020705
e.	1,00,000 + 80,00,000 + 40,000 + 200 + 3	18040203
f.	10,00,00,000 + 20,00,000 + 30,000 + 400 + 1	102030401

Exercise 1 (b)

1. Rewrite the following numerals using commas to separate the periods according to the Indian place value system and International place value system :

Ans.

S.No.	Numeral	Indian System	International Sysetm
a.	226769804	22, 67, 69, 804	226, 769, 804
b.	699999996	69, 99, 99, 996	699, 999, 996
c.	398423007	39, 84, 23, 007	398, 423, 007
d.	553200509	55, 32, 00, 509	553, 200, 509
e.	400000002	40, 00, 00, 002	400, 000, 002
f.	80001237	8, 00, 01, 237	80, 001, 237

2. Fill in the blanks :

Ans. a. 1 million = **10** lakhs. b. 100 lakhs = **10** millions.
c. 10 millions = **1** crore. d. **10** crores = 100 millions.

3. Write the following in figures :

Ans. a. 3,743,142 b. 9,547,505 c. 56,054,532
d. 22,240,783 e. 405,004,999

4. Write each of the following numbers in words using International Place Value System :

Ans. a. **5,300,649** = Five million three hundred thousand six hundred forty-nine.
b. **2,896,450** = Two million eight hundred ninety-six thousand four hundred fifty.
c. **3,856,989** = Three million eight hundred fifty-six thousand nine hundred eighty-nine
d. **40,500,179** = Forty million, Five hundred thousand, One hundred seventy nine.
e. **256,545,198** = Two hundred fifty-six million five

hundred forty-five thousand one hundred ninety-eight.

f. **534,938,125** = Five hundred thirty four million nine hundred thirty eight thousand one hundred twenty-five.

g. **98,256,188** = Ninety-eight million two hundred fifty six thousand one hundred eighty-eight.

h. **123,453,536** = One hundred twenty-three million four hundred fifty-three thousand five hundred thirty-six.

HOTS

Ans. 10 watches.

Exercise 1 (c)

1. Compare each pair of numbers. Put >, < or = in the ___ :

Ans. a. > b. < c. < d. <
e. < f. <

2. Arrange the following numbers in ascending order :

Ans. a. **Ascending order :**
288689 < 2586798 < 20507106 < 40008216

b. **Ascending order :**
5896348 < 5896349 < 6896348 < 6896349

c. **Ascending order :**
3854798 < 38547986 < 385479850 < 385479860

d. **Ascending order :**
634398 < 6664398 < 43986666 < 66664398

3. Arrange the following numbers in descending order :

Ans. a. **Descending order :**
9300093 > 9200009 > 9100009 > 940000

b. **Descending order :**
78943025 > 78940325 > 78904325 > 78094325

c. **Descending order :**
345678912 > 3545878901 > 234567891 > 123456789

d. **Descending order :**
578342100 > 478342100 > 57834210 > 4783421

4. Write the predecessor and successor of each of the following numerals :

Ans.

S.No.	Number	Predecessor	Successor
a.	82915592	82915591	82915593
b.	73456704	73456703	73456705
c.	60000000	59999999	60000001
d.	598979600	598979599	598979601

Exercise 1 (d)

1. Write the smallest and greatest number formed by given digits :

Ans.

S.No.	Digits	Smallest Number	Greatest Number
a.	9, 7, 0, 1, 2, 4	102479	974210
b.	5, 8, 7, 2, 9, 3	235789	987532
c.	6, 7, 3, 1, 0, 4	103467	764310
d.	2, 6, 5, 3, 8	23568	86532
e.	0, 1, 2, 3, 8, 5, 6, 7	10235678	876543210

2. Round these numbers as directed :

Ans. a. **7346 to the nearest 10**
Digit at ones place is 6.
Since 6 > 5
So, no. is rounded to 10
= 7350

b. **3388 to the nearest 100**
Digit at tens place is 8.
Since 8 > 5
So, no. is rounded to 100
= 3400

c. **91003 to the nearest 1000**
Digit at hundred place is 0.
Since 0 < 5
So, required no. is 91000

d. **649 to the nearest 10**
Digit at ones place is 9.
Since 9 > 5
So, required no. is 650

e. **75325 to the nearest 100**
Digit at tens place is 2.
Since, 2 < 5
So, required no. is 75300

f. **86950 to the nearest 1000**
Digit at hundred place is 9.
Since, 9 > 5
So, required no. is 87000.

3. Round the numbers to the nearest ten thousand :

Ans. a. **60,349**

b. **79,432**

Digit at thousand place is 0.
Since 0 < 5
So, required no. = 60000

Digit at thousand place is 9.
Since 9 > 5
So, required no. = 80000

c. **85,000**
Digit at thousand place is 5.
Since 5 = 5
So, required no. = 90000

d. **43,150**
Digit at thousand place is 3.
Since 3 < 5
So, required no. = 40000

e. **53,109**
Digit at thousand place is 3.
Since 3 < 5
So, required no. = 50000

4. Round the numbers to the nearest lakh :

Ans. a. **1,56,932**
Digit at ten thousand place is 5.
Since 5 = 5
So, Required No. = 200000

b. **2,09,321**
Digit at ten thousand place is 0. Since 0 < 5
So, Required No. = 200000

c. **4,18,399**
Digit at ten thousand place is 1.
Since 1 < 5
So, Required no. = 400000

d. **5,93,299**
Digit at ten thousand place is 9. Since 9 > 5
So, Required no. = 600000

e. **8,50,000**
Digit at ten thousand place is 5.
Since 5 = 5
So, Required no. = 900000

MCQs

Choose the correct option.

Ans. 1. b 2. a 3. d 4. c 5. a

Chapter

2 Roman Numerals

Exercise 2

1. Write the following as Roman numerals :

Ans. a. LXVIII b. CCCXXXI c. CDXII

d. CLXIII e. MXXIX f. CCCXXXIV
g. CDLXVII h. DLXXIX i. MCMXXXVIII
j. MCCLVI

2. Write the following as Hindu-Arabic numerals :

Ans. a. 48 b. 110 c. 635 d. 162 e. 190
f. 222 g. 282 h. 508 i. 1125 j. 742

3. Compare the following Roman numerals and use >, < or = :

Ans.

a.	LIX	<	LXXI	b.	CD	<	DC
c.	MCXCIII	=	MCXCIII	d.	DCVII	>	CDVII
e.	CCLXXV	>	CXLV	f.	CMII	<	CMV

Mental Maths

Tick the correct Roman numeral for the given Hindu Arabic numeral :

Ans.

a. 1345
- XIIIXLV
- MCCCXLV 3
- MIIILV

b. 978
- MCLII
- CMLXXVIII 3
- CMDCCVIII

c. 5690
- VDCXC 3
- MMMDDD
- VDXLXXXX

MCQs

Choose the correct option.

Ans. 1. c 2. c 3. a

Fun with Maths

A. Complete the crossword with the Hindu-Arabic numerals.

Ans.

		[1] 1			
		[2] 5	0		
[3] 1	6			[4] 1	[5] 2
4		[6] 1	3		0
		7		[7] 1	9
				[8] 2	8

Across fi
2. L
3. XVI
4. XII
6. XIII
7. XIX
8. XVIII

Down fl
1. XV
3. XIV
5. XX
6. XVII
7. XI

B. Match the following :

Ans.

Birth Year	Legends
MDCCCLXXV →	
MCMXXXI →	
MCMXLII →	
MDCCCXCI →	
MCMVII →	

Chapter

3 Addition and Subtraction

Exercise 2

1. Add the following :

Ans. a.

	TL	L	TTh	Th	H	T	O
	2	5	0	4	9	3	7
+	5	1	6	9	8	7	6
	7	6	7	4	7	8	3

b.

	TL	L	TTh	Th	H	T	O
	2	4	1	7	9	3	3
+	3	6	5	4	7	8	2
	6	0	7	2	7	1	5

c.

	C	TL	L	TTh	Th	H	T	O
	2	6	2	2	2	0	3	5
+	2	1	0	9	8	8	3	6
	4	7	3	2	0	8	7	1

d.

	TL	L	TTh	Th	H	T	O
	3	1	4	0	7	2	8
+	6	3	5	8	4	5	9
	9	4	9	9	1	8	7

e.

	TL	L	TTh	Th	H	T	O
	1	0	0	9	9	3	9
+	2	3	5	0	3	6	1
	3	3	6	0	3	0	0

f.

	C	TL	L	TTh	Th	H	T	O
	1	4	7	3	6	4	9	2
+	5	0	9	7	3	7	8	2
	6	5	7	1	0	2	7	4

2. Verify by adding and name the property :

Ans. a. Commutative property b. Commutative property

c. Grouping associative property d. Zero identity property

3. Find the sum of the following numbers :

Ans. a.

TL	L	TTh	Th	H	T	O
	6	0	7	8	0	0	5
+				5	7	3	7
6	0	8	3	7	4	2

b.

TL	L	TTh	Th	H	T	O
	2	7	6	0	5	4	8
+	1	0	8	1	5	3	1
3	8	4	2	0	7	9

c.

TL	L	TTh	Th	H	T	O
	1	8	3	7	0	0	3
+		5	2	6	3	0	8
2	3	6	3	3	1	1

d.

TL	L	TTh	Th	H	T	O
	1	6	7	1	4	6	1
+	2	2	6	3	5	0	2
3	9	3	4	9	6	3

e.

TL	L	TTh	Th	H	T	O
	4	8	3	2	7	5
+		6	5	8	3	8
5	4	9	1	1	3

f.

TL	L	TTh	Th	H	T	O
	1	6	5	1	0	6	8
+		2	3	4	0	0	2
1	8	8	5	0	7	0

Mental Maths

Subtract and check with addition :

Ans. 1.

TTh	Th	H	T	O
	8	6	9	7	4
–	5	3	5	9	8
	3	3	3	7	6

TTh	Th	H	T	O
	3	3	3	7	6
+	5	3	5	9	8
8	6	9	7	4

2.

TL	L	TTh	Th	H	T	O
7	8	2	9	2	5	6
–	7	9	9	5	7	8
7	0	2	9	6	7	8

TL	L	TTh	Th	H	T	O
7	0	2	9	6	7	8
–	7	9	9	5	7	8
7	8	2	9	2	5	6

Exercise 3 (c)

1. Subtract and check your answer by addition :

Ans. a.

C	TL	L	TTh	Th	H	T	O
	5	8	1	7	3	0	5	5
–	3	1	8	5	7	5	5	0
	2	6	3	1	5	5	0	5

Checking

C	TL	L	TTh	Th	H	T	O
	2	6	3	1	5	5	0	5
+	3	1	8	5	7	5	5	0
5	8	1	7	3	0	5	5

b.

	TL	L	TTh	Th	H	T	O
	5	9	8	0	3	5	0
–		4	0	6	7	3	0
	1	9	1	2	8	2	0

Checking

	TL	L	TTh	Th	H	T	O
	1	9	1	2	8	2	0
+	4	0	6	7	5	3	0
	5	9	8	0	3	5	0

c.

	TL	L	TTh	Th	H	T	O
	9	8	3	9	1	8	4
–	2	1	0	0	0	0	0
	7	7	3	9	1	8	4

Checking

	TL	L	TTh	Th	H	T	O
	7	7	3	9	1	8	4
+	2	1	0	0	0	0	0
	9	8	3	9	1	8	4

d.

	TL	L	TTh	Th	H	T	O
	4	3	4	7	9	7	0
–	3	1	2	3	4	5	0
	1	2	2	4	5	2	0

Checking

	TL	L	TTh	Th	H	T	O
	1	2	2	4	5	2	0
+	3	1	2	3	4	5	0
	4	3	4	7	9	7	0

e.

	TL	L	TTh	Th	H	T	O
	7	8	2	8	1	9	0
–	5	6	1	7	2	9	3
	2	2	1	0	8	9	7

Checking

	TL	L	TTh	Th	H	T	O
	2	2	1	0	8	9	7
+	5	6	1	7	2	9	3
	7	8	2	8	1	9	0

f.

	C	TL	L	TTh	Th	H	T	O
	6	2	4	5	6	1	8	4
–	3	6	2	1	8	1	4	4
	2	6	2	3	8	0	4	0

Checking

	C	TL	L	TTh	Th	H	T	O
	2	6	2	3	8	0	4	0
+	3	6	2	1	8	1	4	4
	6	2	4	5	6	1	8	4

g.

	C	TL	L	TTh	Th	H	T	O
	8	6	7	0	4	8	1	5
–	5	2	3	8	2	5	0	0
	3	4	3	2	2	3	1	5

Checking

	C	TL	L	TTh	Th	H	T	O
	3	4	3	2	2	3	1	5
+	5	2	3	8	2	5	0	0
	8	6	7	0	4	8	1	5

h.

	C	TL	L	TTh	Th	H	T	O
	2	7	0	5	6	7	3	0
–		5	7	1	8	2	9	0
	2	1	3	3	8	4	4	0

Checking

	C	TL	L	TTh	Th	H	T	O
	2	1	3	3	8	4	4	0
+		5	7	1	8	2	9	0
	2	7	0	5	6	7	3	0

Exercise 3 (d)

Solve these story sums :

Ans. 1. Mr. Sen bought a house for = 35,25,600
He bought a computer for = + 58,450
Total money, he spend = **35,84,050**

So, he spend `35,84,050 in all.

2. Population of village B = 43,45,400
Population more than village B = + 2,36,465
So, population of village A = **45,81,865**

So, population of A = 45,81,865.

3. Sum of two numbers = 86,73,872
One Number = – 34,05,632
So, other no. = **52,68,240**

So, the other no. is 52,68,240.

4. No. of postal stamps in the post office = 67,34,127
Postal stamps were burnt = – 42,64,068
remaining postal stamps = **24,70,059**

So, There was 24,70,059 postal stamps left.

5. Difference between two numbers = 24,50,172
Small Number = + 15,28,978
So, the bigger no. = **39,79,150**
So, the bigger no. will be 39,79,150.

6. Mrs Bhushan had money in her account = 47,35,150
She bought a flat for = 18,87,250
She bought a car for = – 3,45,500
Total money, she spent = **22,32,750**

So, Mrs Bhushan had remaining money after purchasing flat and car.

7. Letters printed in a book = 85,24,650
No. of small letters = – 82,09,426
So, no. of capital letters = **3,24,224**

So, there are 3,24,224 capital letters in the book.

8. No. of mobiles produced is 2011 by a factory = 68,46,325

If produced 4,25,600 mobile more than that of 2011 in 2012 = + 4,25,600

So no. of mobiles produced in 2012 = **7271925**

So, 7271925 mobiles phones produced in 2012.

MCQs

Choose the correct option.

Ans. 1. a 2. a 3. c 4. a

Fun with Maths

Solve problems and match the following by colouring them alike.

Ans.

860000501 – 2987010093	1,27,34,565
7462996 + 5271569	2,25,45,187
8789484 + 3322115 + 3234455	4,27,840
26013642 – 3468455	56,12,99,408
563456 – 246910 + 111294	1,53,46,054

Chapter

4 Multiplication and Division

Exercise 4 (b)

1. Multiply :

Ans. a.

```
  4967
 ×92
  9934
44703×
456964
```

b.

```
  7239
 ×37
 50673
21717×
267843
```

c.

```
  5135
 ×43
 15405
20540×
220805
```

Thus, 4967 × 92
= 456964

Thus, 7239 × 37
= 267843

Thus, 5135 × 43
= 220805

d.
```
   2138
   ×68
  17104
 12828×
 145384
```

e.
```
   2685
   ×84
  107416
 214832×
 2255736
```

f.
```
   19807
   ×72
   39614
 138649×
 1426104
```

Thus, 2138 × 68
= 145384

Thus, 26854 × 84
= 2255736

Thus, 19807 × 72
= 1426104

g.
```
   31734
   ×372
   63468
 222138×
 95202××
 11805048
```

h.
```
   42135
   ×533
  126405
 126405×
 210675×
 22457955
```

i.
```
   9219
  ×5838
   73752
  27657×
 73752××
 46095×××
 53820522
```

Thus, 31734 × 372
= 11805048

Thus, 42135 × 533
= 22457955

Thus, 9219 × 838
= 53820522

j.
```
   4225
  ×2805
   21125
   0000×
 33800××
 8450×××
 11851125
```

k.
```
   73609
   ×453
  220827
 368045×
 294436××
 33344877
```

l.
```
   65912
   236
  395472
 197736×
 131824××
 15555232
```

Thus, 4225 × 2805
= 11851125

Thus, 73609 × 453
= 33344877

Thus, 65912 × 236
= 15555232

2. Find the product of :

Ans. a. **109 × 278 × 47**

30302 × 47

= 1424194

Thus, 109 × 278 × 47

= 1424194

```
   109
  ×278
   872
  763×
 218××
 30302
```

```
   30302
   47
  212114
 121208×
 1424194
```

b. **438 × 371 × 92**

162498 × 92
= 14949816

```
   438
  ×371
   438
  3066×
 1314××
162498
```

```
162498
   ×92
324996
1462482×
14949816
```

Thus, 438 × 371 × 92 = 14949816

c. **438 × 546 × 34**

239148 × 34
= 8131032

```
   438
  ×546
  2628
 1752×
2190××
239148
```

```
239148
   ×34
956592
717444×
8131032
```

Thus, 438 × 546 × 34 = 8131032

d. **860 × 765 × 45**

657900 × 45
= 29605500

```
   860
  ×765
  4300
 5160×
6020××
657900
```

```
657900
   ×45
3289500
2631600×
29605500
```

Thus, 860 × 765 × 45 = 29605500

Exercise 4 (c)

1. Fill in the blanks :

Ans. a. 3450 ÷ 1 = **3450** b. 29876 ÷ 29876 = **1**

c. **0** ÷ 495 = 0 d. 37945 ÷ 0 = **Not degined**

2. Complete the table.

Ans.

	Number	Quotient	Remainder
a.	8164 ÷ 10	816	4
b.	18275 ÷ 100	182	75
c.	88888 ÷ 10	88888	8

d.	723456 ÷ 10000	72	3456
e.	57987 ÷ 1000	57	987
f.	612345 ÷ 1000	612	345

3. Find :

Ans. a. Divisor = 35, quotient = 22, remainder = 14

Dividend = divisor × quotient + remainder

= 35 × 22 + 14 = 770 + 14 = 784

b. Dividend = 3699

Divisor = ?

Quotient = 231

Remainder = 3

Dividend = divisor × quotient + remainder

3699 = divisor × 231 + 3

3699 – 3 = divisor × 231

Divisor = $\frac{3696}{231}$

Divisor = 16

Exercise 4 (d)

1. Divide and check your answer :

Ans. a. **11426 ÷ 87**

Q = 131, R = 29

Check :

Dividend = divisor × quotient + remainder

11426 = 87 × 131 + 29

11426 = 11397 + 29

11426 = 11426 ⊳ L.H.S = R.H.S

So, answer is correct.

```
      131
87 ) 11426
   – 87↓↓|
     272|
   – 261↓
     116
    – 87
      29
```

b. **25766 ÷ 115**

Q = 224, R = 6

Check :

Dividend = divisor × quotient + remainder

25766 = 115 × 224 + 6

25766 = 25760 + 6

```
      224
115 ) 25766
   – 230↓|
     276|
   – 230↓
     466
    – 460
       6
```

25766 = 25766
L.H.S = R.H.S
So, answer is correct.

c. **73609 ÷ 453**
Q = 162, R = 223
Check :
Dividend = divisor × quotient + remainder
73609 = 453 × 162 + 223
73609 = 73386 + 223
73609 = 73609
L.H.S = R.H.S
So, answer is correct.

```
      162
453 ) 73609
    – 453↓
      2830
    – 2718↓
       1129
      – 906
        223
```

d. **9067852 ÷ 1245**
Hence, 9067852 ÷ 1245
Q = 9415, R = 517

```
      9415
1245 ) 9067852
     – 8715↓
       3528
     – 2490↓
      10385
     – 9960↓
       4252
      – 3735
        517
```

2. Divide the following :

Ans. a. **80645 ÷ 92**
Hence, 80645 ÷92
Q = 876, R = 92

```
     876
92 ) 80645
   – 736↓
     704
   – 644↓
     605
    – 552
      53
```

b. 42135 ÷ 533

Q = 79, R = 28

Check :

Dividend = divisor × quotient + remainder

42135 = 533 × 79 + 28

42135 = 42107 + 28

42135 = 42135 ⊳ L.H.S = R.H.S

So, answer is correct.

```
      79
533) 42135
   – 3731↓
     4825
   – 4797
       28
```

c. **32188 ÷ 68**

Q = 473, R = 24

Check :

Dividend = divisor × quotient + remainder

32188 = 68 × 473 + 24

32188 = 32164 + 24

32188 = 32188 ⊳ L.H.S = R.H.S

So, answer is correct.

```
      473
68) 32188
  – 272↓
    498
  – 476
      228
    – 204
       24
```

d. **162097 ÷ 76**

Q = 2132, R = 65

Check :

Dividend = divisor × quotient + remainder

162097 = 76 × 2132 + 65

162097 = 162032 + 65

162097 = 162097

L.H.S = R.H.S

So, answer is correct.

```
      2132
76) 162097
  – 152↓
    100
  – 76
      249
    – 228
       217
     – 152
        65
```

e. **371265 ÷ 214**

Hence, 371265 ÷ 214

Q = 1734, R = 189

```
      1734
214) 371265
   – 214↓
     1572
   – 1498
       746
     – 642
      1045
     – 856
       189
```

f. **42135 ÷ 533**

Q = 79, R = 28

Check :

Dividend = divisor × quotient + remainder

42135 = 533 × 79 + 28

42135 = 42107 + 28

42135 = 42135 ⊳ L.H.S = R.H.S

So, answer is correct.

```
      79
533 ) 42135
    – 3731↓
      4825
    – 4797
       28
```

g. **53962 ÷ 215**

Q = 250, R = 212

Check :

Dividend = divisor × quotient + remainder

53962 = 215 × 250 + 212

53962 = 53750 + 212

53962 = 53962

L.H.S = R.H.S

So, answer is correct.

```
      250
215 ) 53962
    – 430↓
      1096
    – 1075↓
       212
     – 000
       212
```

h. **9415 ÷ 305**

Hence, 2871697 ÷ 305

Q = 9415, R = 122

```
      9415
305 ) 2871697
    – 2745↓
      1266
    – 1220↓
       469
     – 305↓
       1647
     – 1525
       122
```

i. **9219 ÷ 5838**

Q = 1, R = 3381

Check :

Dividend = divisor × quotient + remainder

9219 = 5838 × 1 + 3381

9219 = 5388 + 3381

9219 = 9219 ⊳ L.H.S = R.H.S

So, answer is correct.

```
      1
5838 ) 9219
     – 5838
       3381
```

j. **1302027 ÷ 651**

Q = 2000, R = 27

Check :

Dividend = divisor × quotient + remainder

1302027 = 651 × 2000 + 27

1302027 = 1302000 + 27

1302027 = 1302027

L.H.S = R.H.S

So, answer is correct.

```
        2000
651) 1302027
   – 1302↓↓↓
        027
      – 000
         27
```

k. **528717 ÷ 1055**

Q = 501, R = 162

Check :

Dividend = divisor × quotient + remainder

528717 = 1055 × 501 + 162

528717 = 528555 + 162

528717 = 528717

L.H.S = R.H.S

So, answer is correct.

```
        501
1055) 528717
    – 5275↓↓
       1217
     – 1055
        162
```

l. **4567890 ÷ 3135**

Q = 1457, R = 195

Check :

Dividend = divisor × quotient + remainder

4567890 = 3135 × 1457 + 195

4567890 = 4567695 + 195

4567890 = 4567890

L.H.S = R.H.S

So, answer is correct.

```
        1457
3135) 4567890
    – 3135↓
      14328
    – 12540↓
      17889
    – 15675↓
      22140
    – 21945
        195
```

Exercise 4 (e)

Ans. 1. The cost of 125 toy cars = ` 3194375

The cost of 1 toy car = ` 3194375 ÷ 125

= ` 25555

So, cost of 1 toy car `25555.

```
      25555
125 ) 3194375
    – 250
      694
    – 625
      693
    – 625
      687
    – 625
      625
    – 625
        0
```

2. No. of trees in each row = 208

No. of rows = 1958

Total no. of trees = 208 × 1958

= 407264

So, there are 407264 trees in Justin's orchard.

```
    1 9 5 8
  × 2 0 8
  1 5 6 6 4
3 9 1 6 × ×
4 0 7 2 6 4
```

3. Cost of a dress=` 1459

No. of sets = 375

Total cost of 375 sets of dress = ` 1459 × 375

= ` 547125

So, school paid `547125 for dresses.

```
    1 4 5 9
  × 3 7 5
    7 2 9 5
  1 0 2 1 3 ×
4 3 7 7 × ×
5 4 7 1 2 5
```

4. Total no. of chairs=15,346

Cost of each chair = ` 398

Total money spend on chairs = ` 15346 × 398

= ` 6107708

So, Mr Jacob paid `6107708 to the shopkeeper for chairs.

```
    1 5 3 4 6
  × 3 9 8
  1 2 2 7 6 8
1 3 8 1 1 4 ×
4 6 0 3 8 × ×
6 1 0 7 7 0 8
```

5. Total no. of apples = 648550
Apple can be packed in each box = 1526
No. of box required = 648550 ÷ 1526
= 425
So, 425 box are required to pack 6,48,550 apples.

```
        425
1526) 648550
    – 6104↓
       3815
      – 3052↓
        7630
       – 7630
            0
```

6. The product of two numbers = 269928
One no. = 552
Other no. = 269928 ÷ 552
= 489
So, the other number 489.

```
        489
552) 269928
    – 2208↓
       4912
      – 4416↓
        4968
       – 4968
            0
```

7. Books were printed = 1135
Pages in each book = 236
Total pages in all books = 1135 × 236
So, there were 267860 pages in all books.

```
      1 1 3 5
    × 2 3 6
    ———————
      6 8 1 0
    3 4 0 5 ×
  2 2 7 0 × ×
  ———————————
  2 6 7 8 6 0
```

8. Maximum capacity of people in a stadium = 52650
People can sit in each row = 975
No. of rows = 52650 ÷ 975
= 54
So, there are 54 rows in the stadium.

```
        54
975) 52650
    – 4875↓
       3900
      – 3900
            0
```

Mental Maths

Mr. Kabir has an ice factory. The factory needs 750 litres of water everyday to make ice.

Ans. How much water would it use in 2 weeks to

make ice? **10500 litres**

How much would 225 packs of ice cost if one pack costs `15? **` 3375**

How many cubes would be there in 9 packs if one pack contains 4 closen cubes? **36**

MCQs

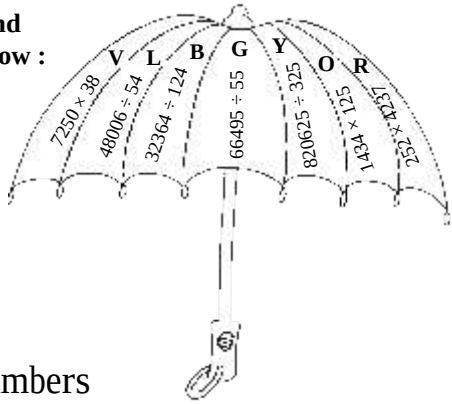
Choose the correct option.

Ans. 1. d 2. c 3. b 4. a

Fun with Maths

Solve the given problems and colour the picture given below :

Ans.



Chapter

5 Fractions Numbers

1. Read the questions and find :

Ans. a. **Answer :** 27

$\frac{9}{10}$ of 30

$= \frac{9 \times 30}{10}$

$= 9 \times 3$

b. **Answer :** Balloons are not red = 12 – 4 = 8

$\frac{1}{3}$ of 12

$= \frac{1 \times 12}{3}$

$= 4$

c. **Answer :** 21 Burgers

28 of $\frac{3}{4}$

$= \frac{28 \times 3}{4}$

$= 21$

Exercise 5 (a)

1. Classify the following fractions as proper, improper, mixed or unit :

Ans. a. Proper b. Unit c. Proper

d. Mixed e. improper f. improper

2. Convert the following improper fractions into mixed fractions :

Ans. a. $\mathbf{\frac{18}{7}}$

$$\begin{array}{r} 7\overline{)18}\,(2 \\ -14 \\ \hline 4 \end{array} = 2\frac{4}{7}$$

b. $\mathbf{\frac{46}{13}}$

$$\begin{array}{r} 13\overline{)46}\,(3 \\ -39 \\ \hline 7 \end{array} = 3\frac{7}{13}$$

c. $\mathbf{\frac{121}{8}}$

$$\begin{array}{r} 8\overline{)121}\,(15 \\ -120 \\ \hline 1 \end{array} = 15\frac{1}{8}$$

d. $\mathbf{\frac{78}{9}}$

$$\begin{array}{r} 9\overline{)78}\,(8 \\ -72 \\ \hline 6 \end{array} = 8\frac{6}{9}$$

e. $\mathbf{\frac{106}{11}}$

$$\begin{array}{r} 11\overline{)106}\,(9 \\ -99 \\ \hline 7 \end{array} = 9\frac{7}{11}$$

3. Convert the following mixed fractions into improper fractions :

Ans. a. $\mathbf{6\frac{1}{9}} = \frac{6 \times 9 + 1}{9} = \frac{63 + 1}{9} = \frac{64}{9}$

b. $\mathbf{3\frac{2}{11}} = \frac{3 \times 11 + 2}{11} = \frac{33 + 2}{11} = \frac{35}{11}$

c. $\mathbf{4\frac{1}{7}} = \frac{7 \times 4 + 1}{7} = \frac{28 + 1}{7} = \frac{29}{7}$

d. $\mathbf{7\frac{3}{4}} = \frac{7 \times 4 + 3}{4} = \frac{28 + 3}{4} = \frac{31}{4}$

e. $\mathbf{8\frac{1}{5}} = \frac{8 \times 5 + 1}{5} = \frac{40 + 1}{5} = \frac{41}{5}$

4. Find three equivalent fractions of the following by multiplication :

Ans. a. Next three fractions equivalent to $\frac{1}{8}$ are :

$\frac{1 \times 2}{8 \times 2} = \frac{2}{16}$; $\frac{1 \times 3}{8 \times 3} = \frac{3}{24}$; $\frac{1 \times 4}{8 \times 4} = \frac{4}{32}$

Hence, the required fractions are $\frac{2}{16}$, $\frac{3}{24}$ and $\frac{4}{32}$.

b. Next three fractions equivalent to $\frac{2}{5}$ are :

$\frac{2 \times 2}{5 \times 2} = \frac{4}{10}$; $\frac{2 \times 3}{5 \times 3} = \frac{6}{15}$; $\frac{2 \times 4}{5 \times 4} = \frac{8}{20}$

Hence, the required fractions are $\frac{4}{10}$, $\frac{6}{15}$ and $\frac{8}{20}$.

c. Next three fractions equivalent to $\frac{5}{9}$ are :

$\frac{5 \times 2}{9 \times 2} = \frac{10}{18}$; $\frac{5 \times 3}{9 \times 3} = \frac{15}{27}$; $\frac{5 \times 4}{9 \times 4} = \frac{20}{36}$

Hence, the required fractions are $\frac{10}{18}$, $\frac{15}{27}$ and $\frac{20}{36}$.

d. Next three fractions equivalent to $\frac{6}{7}$ are :

$\frac{6 \times 2}{7 \times 2} = \frac{12}{14}$; $\frac{6 \times 3}{7 \times 3} = \frac{18}{21}$; $\frac{6 \times 4}{7 \times 4} = \frac{24}{28}$

Hence, the required fractions are $\frac{12}{14}$, $\frac{18}{21}$ and $\frac{24}{28}$.

e. Next three fractions equivalent to $\frac{5}{7}$ are :

$\frac{5 \times 2}{7 \times 2} = \frac{10}{14}$; $\frac{5 \times 3}{7 \times 3} = \frac{15}{21}$; $\frac{5 \times 4}{7 \times 4} = \frac{20}{28}$

Hence, the required fractions are $\frac{10}{14}$, $\frac{15}{21}$ and $\frac{20}{28}$.

5. Find the equivalent fraction of $\frac{8}{26}$, having :

Ans. a. We have $\frac{8}{26}$ and we have to find a fraction having denominator 52.

Since 26 × 2 = 52, so we multiply the numerator and

denominator of the fraction $\frac{8}{26}$ by 2, we get $\frac{8 \times 2}{26 \times 2} = \frac{16}{52}$

Hence, the required fraction is $\frac{16}{52}$.

b. We have $\frac{8}{26}$ and we have to find a fraction having numerator 40.

Since $8 \times 5 = 40$, so we multiply the numerator and denominator of the fraction $\frac{8}{26}$ by 5, we get $\frac{8 \times 5}{26 \times 5} = \frac{40}{130}$

Hence, the required fraction is $\frac{40}{130}$.

c. We have $\frac{8}{26}$ and we have to find a fraction with denomi- nator 13.

Since $26 \div 2 = 13$, so we multiply the numerator and denominator of the fraction $\frac{8}{26}$ by 2, we get $\frac{8 \div 2}{26 \div 2} = \frac{4}{13}$

Hence, the required fraction is $\frac{4}{13}$.

6. Check whether the pair of fractions given below are equivalent :

Ans. a. $\frac{4}{9}$, $\frac{12}{20}$

$\frac{4}{9} \times \frac{12}{20}$

$9 \times 20 \quad 9 \times 12$

$80 \quad „ \quad 108$

So, This pair is not equivalent.

b. $\frac{2}{5}$, $\frac{6}{15}$

$\frac{2}{5} \times \frac{6}{15}$

$2 \times 12 \quad 3 \times 8$

$24 \quad „ \quad 24$

So, This pair is equivalent.

c. $\frac{7}{8}$, $\frac{12}{16}$

$\frac{7}{8} \times \frac{12}{16}$

$7 \times 16 \quad 8 \times 12$

$112 \quad „ \quad 96$

So, This pair is not equivalent.

d. $\frac{5}{6}$, $\frac{15}{18}$

$\frac{5}{6} \times \frac{15}{18}$

e. $\frac{2}{3}$, $\frac{8}{12}$

$\frac{2}{3} \times \frac{8}{12}$

f. $\frac{3}{4}$, $\frac{9}{15}$

$\frac{3}{4} \times \frac{9}{15}$

$5 \times 18 \quad 6 \times 15$	$2 \times 12 \quad 3 \times 8$	$3 \times 15 \quad 4 \times 9$
$90 = 90$	$24 = 24$	45 „ 36
So, This pair is equivalent.	So, This pair is equivalent.	So, This pair is not equivalent.

7. Reduce the following fractions to the lowest term by dividing with their HCF :

Ans. a. $\mathbf{\frac{16}{28}}$

$16 = 2 \times 2 \times 2 \times 2$

$28 = 2 \times 2 \times 7$

So, HCF = $2 \times 2 = 4$

So, $\frac{16 \div 4}{28 \div 4} = \frac{4}{7}$

Hence, $\frac{16}{28}$ is reduced to the lowest term as $\frac{4}{7}$.

b. $\mathbf{\frac{45}{25}}$

$45 = 3 \times 3 \times 5$

$25 = 5 \times 5$

So, HCF = 5

So, $\frac{45 \div 5}{25 \div 5} = \frac{9}{5}$

Hence, $\frac{45}{25}$ is reduced to the lowest term as $\frac{9}{5}$.

c. $\mathbf{\frac{32}{50}}$

$32 = 2 \times 2 \times 2 \times 2 \times 2$

$50 = 2 \times 5 \times 5$

So, HCF = 2

So, $\frac{32 \div 2}{50 \div 2} = \frac{16}{25}$

Hence, $\frac{32}{50}$ is reduced to the lowest term as $\frac{16}{25}$.

d. $\mathbf{\frac{112}{92}}$

$112 = 2 \times 2 \times 2 \times 2 \times 7$

$92 = 2 \times 2 \times 23$

So, HCF = $2 \times 2 = 4$

So, $\frac{112 \div 4}{92 \div 4} = \frac{28}{23}$

Hence, $\frac{112}{92}$ is reduced to the lowest term as $\frac{28}{23}$.

e. $\mathbf{\frac{54}{72}}$

$54 = 2 \times 3 \times 3 \times 3$

$72 = 2 \times 2 \times 2 \times 3 \times 3$

So, HCF = $2 \times 3 \times 3 = 18$

f. $\mathbf{\frac{55}{100}}$

$55 = 5 \times 11$

$100 = 2 \times 2 \times 5 \times 5$

So, HCF = 5

So, $\frac{54 \div 18}{72 \div 18} = \frac{3}{4}$

Hence, $\frac{54}{72}$ is reduced to the lowest term as $\frac{3}{4}$.

So, $\frac{55 \div 5}{100 \div 5} = \frac{11}{20}$

Hence, $\frac{55}{100}$ is reduced to the lowest term as $\frac{11}{20}$.

g. $\mathbf{\frac{18}{15}}$

$18 = 2 \times 3 \times 3$

$15 = 3 \times 5$

So, HCF = 3

So, $\frac{54 \div 18}{72 \div 18} = \frac{3}{4}$

Hence, $\frac{54}{72}$ is reduced to the lowest term as $\frac{3}{4}$.

h. $\mathbf{\frac{75}{35}}$

$55 = 5 \times 11$

$100 = 2 \times 2 \times 5 \times 5$

So, HCF = 5

So, $\frac{55 \div 5}{100 \div 5} = \frac{11}{20}$

Hence, $\frac{55}{100}$ is reduced to the lowest term as $\frac{11}{20}$.

Exercise 5 (b)

1. Fill in the blanks using <, > or =.

Ans. a. $\frac{3}{4} > \frac{2}{3}$ b. $\frac{4}{5} > \frac{3}{4}$ c. $\frac{1}{12} < \frac{5}{7}$ d. $\frac{2}{8} < \frac{3}{5}$

e. $\frac{7}{8} > \frac{2}{3}$ f. $\frac{9}{10} > \frac{7}{8}$ g. $\frac{3}{4} > \frac{1}{5}$ h. $\frac{7}{10} < \frac{3}{4}$

2. Compare the following fractions by cross-multiplication method.

Ans. a. $\mathbf{\frac{7}{8}}$ **or** $\mathbf{\frac{3}{4}}$

$\frac{7}{8} \times \frac{3}{4}$

Since 28 > 24

So, $\frac{7}{8} > \frac{3}{4}$

b. $\mathbf{\frac{3}{4}}$ **or** $\mathbf{\frac{9}{10}}$

$\frac{3}{4} \times \frac{9}{10}$

Since 30 < 36

So, $\frac{3}{4} < \frac{9}{10}$

c. $\mathbf{\frac{9}{12}}$ **or** $\mathbf{\frac{8}{18}}$

$\frac{9}{12} \times \frac{8}{18}$

Since 162 > 96

So, $\frac{9}{12} > \frac{8}{18}$

d. $\mathbf{\frac{4}{5}}$ **or** $\mathbf{\frac{2}{7}}$

$\frac{4}{5} \times \frac{2}{7}$

Since 28 > 10

So, $\frac{4}{5} > \frac{2}{7}$

e. $\mathbf{\frac{8}{11}}$ **or** $\mathbf{\frac{3}{55}}$

$\frac{8}{11} \times \frac{3}{55}$

Since 440 > 33

So, $\frac{8}{11} > \frac{3}{55}$

f. $\mathbf{\frac{3}{8}}$ **or** $\mathbf{\frac{9}{15}}$

$\frac{3}{8} \times \frac{9}{15}$

Since 45 < 72

So, $\frac{3}{8} < \frac{9}{15}$

3. Arrange in ascending order.

Ans. a. $\mathbf{\frac{3}{8}}$ **,** $\mathbf{\frac{2}{3}}$ **,** $\mathbf{\frac{7}{12}}$ **,** $\mathbf{\frac{1}{4}}$

2	8, 3, 12, 4
2	4, 3, 6, 2
2	2, 3, 3, 1
3	1, 3, 3, 1
	1, 1, 1, 1

LCM of 8, 3, 12, 4
$= 2 \times 2 \times 2 \times 3 = 24$
Now, by doing each fraction with same denominator, we have

$\frac{3}{8} = \frac{3 \times 3}{8 \times 3} = \frac{9}{24}$ $\quad$ $\frac{2}{3} = \frac{2 \times 8}{3 \times 8} = \frac{16}{24}$

$\frac{7}{12} = \frac{7 \times 2}{12 \times 2} = \frac{14}{24}$ $\quad$ $\frac{1}{4} = \frac{1 \times 6}{4 \times 6} = \frac{6}{24}$

Since 6 < 9 < 14 < 16

So, $\frac{1}{4} < \frac{3}{8} < \frac{7}{12} < \frac{2}{3}$ is the ascending order.

b. $\mathbf{\frac{3}{12}}$ **,** $\mathbf{\frac{7}{8}}$ **,** $\mathbf{\frac{2}{4}}$ **,** $\mathbf{\frac{2}{6}}$

2	12, 8, 4, 6
2	6, 4, 2, 3
2	3, 2, 1, 3
3	3, 1, 1, 3
	1, 1, 1, 1

LCM of 12, 8, 4, 6
$= 2 \times 2 \times 2 \times 3 = 24$
Now, by doing each fraction with same denominator, we have

$\frac{3}{12} = \frac{3 \times 2}{12 \times 2} = \frac{6}{24}$ $\quad$ $\frac{7}{8} = \frac{7 \times 3}{8 \times 3} = \frac{21}{24}$

$\frac{2}{4} = \frac{2 \times 6}{4 \times 6} = \frac{12}{24}$ $\quad$ $\frac{2}{6} = \frac{2 \times 4}{6 \times 4} = \frac{8}{24}$

Since $6 < 8 < 12 < 21$

So, $\frac{3}{12} < \frac{2}{6} < \frac{2}{4} < \frac{7}{8}$

c. $\mathbf{\frac{4}{5}}$, $\mathbf{\frac{2}{3}}$, $\mathbf{\frac{1}{2}}$, $\mathbf{\frac{5}{6}}$, $\mathbf{\frac{6}{10}}$

3	5, 3, 2, 6, 10
3	5, 3, 1, 3, 5
5	5, 1, 1, 1, 5
	1, 1, 1, 1, 1

LCM of 5, 3, 2, 6, 10

$= 2 \times 3 \times 5 = 30$

Now, by doing each fraction with same denominator, we have

$\frac{4}{5} = \frac{4 \times 6}{5 \times 6} = \frac{24}{30}$ $\quad$ $\frac{2}{3} = \frac{2 \times 10}{3 \times 10} = \frac{20}{30}$

$\frac{1}{2} = \frac{1 \times 15}{2 \times 15} = \frac{15}{30}$ $\quad$ $\frac{5}{6} = \frac{5 \times 5}{6 \times 5} = \frac{25}{30}$

$\frac{6}{10} = \frac{6 \times 3}{10 \times 3} = \frac{18}{30}$

Since $15 < 18 < 20 < 24 < 25$

So, $\frac{1}{2} < \quad < \quad < \quad <$ is the ascending order.

d. $\mathbf{\frac{3}{7}}$, $\mathbf{\frac{12}{7}}$, $\mathbf{\frac{5}{7}}$, $\mathbf{\frac{2}{7}}$

There are like, fractions

So, $\frac{2}{7} < \frac{3}{7} < \frac{5}{7} < \frac{12}{7}$ is the ascending order.

e. $\mathbf{\frac{5}{20}}$, $\mathbf{\frac{3}{5}}$, $\mathbf{\frac{11}{10}}$, $\mathbf{\frac{13}{15}}$

2	20, 5, 10, 15
2	10, 5, 5, 15
3	5, 5, 5, 15
5	5, 5, 5, 5
	1, 1, 1, 1

LCM of 20, 5, 10, 15

$= 2 \times 2 \times 3 \times 5 = 60$

Now, by doing each fraction with same denominator, we have

$\frac{5}{20} = \frac{5 \times 3}{20 \times 3} = \frac{15}{60}$ $\quad$ $\frac{3}{5} = \frac{3 \times 12}{5 \times 12} = \frac{36}{60}$

$\frac{11}{10} = \frac{11 \times 6}{10 \times 6} = \frac{66}{60}$ $\quad$ $\frac{13}{15} = \frac{13 \times 4}{15 \times 4} = \frac{52}{60}$

Since $15 < 36 < 52 < 66$

So, $\frac{5}{20} < \frac{3}{5} < \frac{13}{15} < \frac{11}{10}$ is the ascending order.

f. $\mathbf{\frac{1}{2}}$, $\mathbf{\frac{2}{3}}$, $\mathbf{\frac{3}{4}}$, $\mathbf{\frac{1}{3}}$

2	2, 3, 4, 3
2	1, 3, 2, 3
3	1, 3, 1, 3
	1, 1, 1, 1

LCM of 2, 3, 4, 3
$= 2 \times 2 \times 3 = 12$
Now, by doing each fraction with same denominator, we have

$\frac{1}{2} = \frac{1 \times 6}{2 \times 6} = \frac{6}{12}$ $\quad$ $\frac{2}{3} = \frac{2 \times 4}{3 \times 4} = \frac{8}{12}$

$\frac{3}{4} = \frac{3 \times 3}{4 \times 3} = \frac{9}{12}$ $\quad$ $\frac{1}{3} = \frac{1 \times 4}{3 \times 4} = \frac{4}{12}$

Since $4 < 6 < 8 < 9$

So, $\frac{1}{3} < \frac{1}{2} < \frac{2}{3} < \frac{3}{4}$ is the ascending order.

4. Arrange in descending order.

Ans. a. $\mathbf{\frac{3}{10}}$, $\mathbf{\frac{2}{5}}$, $\mathbf{\frac{7}{15}}$

2	10, 5, 15
3	5, 5, 15
5	5, 5, 5
	1, 1, 1

LCM of 10, 5, 15
$= 2 \times 3 \times 5 = 30$
Now, by doing each fraction with same denominator, we have

$\frac{3}{10} = \frac{3 \times 3}{10 \times 3} = \frac{9}{30}$ $\quad$ $\frac{2}{5} = \frac{2 \times 6}{5 \times 6} = \frac{12}{30}$

$\frac{7}{15} = \frac{7 \times 2}{15 \times 2} = \frac{14}{30}$

Since $14 > 12 > 9$

So, $\frac{7}{15} > \frac{2}{5} > \frac{3}{10}$ is the descending order.

b. $\mathbf{\frac{3}{4}}$, $\mathbf{\frac{2}{3}}$, $\mathbf{\frac{5}{8}}$, $\mathbf{\frac{7}{9}}$, $\mathbf{\frac{11}{12}}$

2	4, 3, 8, 9, 12
2	2, 3, 4, 9, 6
2	1, 3, 2, 9, 3
3	1, 3, 1, 9, 3
3	1, 1, 1, 3, 1
	1, 1, 1, 1, 1

LCM of 4, 3, 8, 9, 12
$= 2 \times 2 \times 2 \times 3 \times 3 = 72$
Now, by doing each fraction with same denominator, we have

$$\frac{3}{4} = \frac{3 \times 18}{4 \times 18} = \frac{54}{72}$$

$$\frac{2}{3} = \frac{2 \times 24}{3 \times 24} = \frac{48}{72} \qquad \frac{5}{8} = \frac{5 \times 9}{8 \times 9} = \frac{45}{72}$$

$$\frac{7}{9} = \frac{7 \times 8}{9 \times 8} = \frac{56}{72} \qquad \frac{11}{12} = \frac{11 \times 6}{12 \times 6} = \frac{66}{72}$$

Since 66 > 56 > 54 > 48 > 45

So, $\frac{11}{12} > \frac{7}{9} > \frac{3}{4} > \frac{2}{3} > \frac{5}{8}$ is the descending order.

c. $\mathbf{\frac{2}{3}}$, $\mathbf{\frac{1}{5}}$, $\mathbf{\frac{1}{2}}$, $\mathbf{\frac{5}{6}}$

2	3, 5, 2, 6
3	3, 5, 1, 3
5	1, 5, 1, 1
	1, 1, 1, 1

LCM of 3, 5, 2, 6
$= 2 \times 3 \times 5 = 30$
Now, by doing each fraction with same denominator, we have

$$\frac{2}{3} = \frac{2 \times 10}{3 \times 10} = \frac{20}{30} \qquad \frac{1}{5} = \frac{1 \times 6}{5 \times 6} = \frac{6}{30}$$

$$\frac{1}{2} = \frac{1 \times 15}{2 \times 15} = \frac{15}{30} \qquad \frac{5}{6} = \frac{5 \times 5}{6 \times 5} = \frac{25}{30}$$

Since 25 > 20 > 15 > 6

So, $\frac{5}{6} > \frac{2}{3} > \frac{1}{2} > \frac{1}{5}$ is the descending order.

d. $\mathbf{\frac{2}{3}}$, $\mathbf{\frac{3}{5}}$, $\mathbf{\frac{5}{6}}$, $\mathbf{\frac{3}{4}}$

2	3, 5, 6, 4
2	3, 5, 3, 2
3	3, 5, 3, 1
5	1, 5, 1, 1
	1, 1, 1, 1

LCM of 3, 5, 6, 4
$= 2 \times 2 \times 3 \times 5 = 60$
Now, by doing each fraction with same denominator, we have

$\frac{2}{3} = \frac{2 \times 20}{3 \times 20} = \frac{40}{60}$ $\frac{3}{5} = \frac{3 \times 12}{5 \times 12} = \frac{36}{60}$

$\frac{5}{6} = \frac{5 \times 10}{6 \times 10} = \frac{50}{60}$ $\frac{3}{4} = \frac{3 \times 15}{4 \times 15} = \frac{45}{60}$

Since 50 > 45 > 40 > 36

So, $\frac{5}{6} > \frac{3}{4} > \frac{2}{3} > \frac{3}{5}$ is the descending order.

e. $\mathbf{\frac{3}{8}}$, $\mathbf{\frac{11}{12}}$, $\mathbf{\frac{15}{16}}$

2	8, 12, 16
2	4, 6, 8
2	2, 3, 4
2	1, 3, 2
3	1, 3, 1
	1, 1, 1

LCM of 8, 12, 16
$= 2 \times 2 \times 2 \times 2 \times 3 = 48$
Now, by doing each fraction with same denominator, we have

$\frac{3}{8} = \frac{3 \times 6}{8 \times 6} = \frac{18}{48}$ $\frac{11}{12} = \frac{11 \times 4}{12 \times 4} = \frac{44}{48}$

$\frac{15}{16} = \frac{15 \times 3}{16 \times 3} = \frac{45}{48}$

Since 45 > 44 > 18

So, $\frac{15}{16} > \frac{11}{12} > \frac{3}{8}$ is the descending order.

f. $\mathbf{\frac{1}{8}}$, $\mathbf{\frac{5}{12}}$, $\mathbf{\frac{2}{6}}$, $\mathbf{\frac{3}{4}}$

2	8, 12, 6, 4
2	4, 6, 3, 2
2	2, 3, 3, 1
3	1, 3, 3, 1
	1, 1, 1, 1

LCM of 8, 12, 6 and 4
$= 2 \times 2 \times 2 \times 3 = 24$
Now, by doing each fraction with same denominator, we have

$\frac{1}{8} = \frac{1 \times 3}{8 \times 3} = \frac{3}{24}$ $\frac{5}{12} = \frac{5 \times 2}{12 \times 2} = \frac{10}{24}$

$\frac{2}{6} = \frac{2 \times 4}{6 \times 4} = \frac{8}{24}$ $\frac{3}{4} = \frac{3 \times 6}{4 \times 6} = \frac{18}{24}$

Since 18 > 10 > 8 > 3

So, $\frac{3}{4} > \frac{5}{12} > \frac{2}{6} > \frac{1}{8}$ is the descending order.

Exercise 5 (c)

1. Add.

Ans. a. $\mathbf{\frac{4}{8} + \frac{13}{16}}$

$= \frac{4 \times 2 + 13 \times 1}{16}$

$= \frac{8 + 13}{16}$

$= \frac{21}{16} = 1\frac{5}{16}$

b. $\mathbf{3\frac{2}{3} + 1\frac{1}{4}}$

$= \frac{11}{3} + \frac{5}{4}$

$= \frac{11 \times 4 + 5 \times 3}{12}$

$= \frac{44 + 15}{12} = \frac{59}{12} = 4\frac{11}{12}$

c. $\mathbf{2\frac{1}{10} + 3\frac{4}{5}}$

$= \frac{21}{10} + \frac{19}{5}$

$= \frac{21 \times 1 + 19 \times 2}{10}$

$= \frac{21 + 38}{10} = \frac{59}{10} = 5\frac{9}{10}$

d. $\mathbf{\frac{3}{11} + \frac{2}{5} + \frac{4}{55}}$

$= \frac{3 \times 5 + 2 \times 11 + 4 \times 1}{55}$

$= \frac{15 + 22 + 4}{55}$

$= \frac{41}{55}$

e. $\mathbf{1\frac{4}{9} + 2\frac{7}{24} + \frac{23}{36}}$

$= \frac{13}{9} + \frac{55}{24} + \frac{23}{36}$

$= \frac{13 \times 8 + 55 \times 3 + 23 \times 2}{72}$

$= \frac{104 + 165 + 46}{72}$

$= \frac{315}{72} = \frac{35}{8} = 4\frac{3}{8}$

f. $\mathbf{3 + 1\frac{4}{9} + 2\frac{2}{3}}$

$= \frac{3}{1} + \frac{13}{9} + \frac{8}{3}$

$= \frac{3 \times 27 + 13 \times 3 + 8 \times 9}{27}$

$= \frac{81 + 39 + 72}{27}$

$= \frac{192}{27} = \frac{64}{9} = 7\frac{1}{9}$

2. Subtract.

Ans. a. $\frac{4}{5} - \frac{1}{3}$

$= \frac{4 \times 3 - 5 \times 1}{15}$

$= \frac{12 - 5}{15}$

$= \frac{7}{15}$

b. $2\frac{4}{9} - \frac{5}{12}$

$= \frac{22}{9} - \frac{5}{12}$

$= \frac{22 \times 4 - 5 \times 3}{36}$

$= \frac{88 - 15}{36} = \frac{73}{36} = 2\frac{1}{36}$

c. $3\frac{13}{36} - 1\frac{5}{9}$

$= \frac{121}{36} - \frac{14}{9}$

$= \frac{121 \times 1 - 14 \times 4}{36}$

$= \frac{121 - 56}{36} = \frac{65}{36} = 1\frac{29}{36}$

d. $3\frac{4}{7} - \frac{3}{4}$

$= \frac{25}{7} - \frac{3}{4}$

$= \frac{25 \times 4 - 3 \times 7}{28}$

$= \frac{100 - 21}{28} = \frac{79}{28} = 2\frac{23}{28}$

e. $4\frac{1}{5} - 1\frac{2}{3}$

$= \frac{21}{5} - \frac{5}{3}$

$= \frac{21 \times 3 - 5 \times 5}{15}$

$= \frac{63 - 25}{15} = \frac{38}{15}$

f. $3\frac{3}{8} - 1\frac{3}{4}$

$= \frac{27}{8} - \frac{7}{4}$

$= \frac{27 - 7 \times 2}{8}$

$= \frac{27 - 14}{8} = \frac{13}{8}$

Exercise 5 (d)

Solve :

Ans. 1. Milk bought in the morning = 3 litres

Milk left in the evening = $\frac{5}{8}$ litre

Milk that she used $= \frac{3}{1} - \frac{5}{8}$

$= \frac{3 \times 8 - 5 \times 1}{8}$

$= \frac{24 - 5}{8}$ L $\quad \frac{19}{8}$

So, $\frac{19}{8}$ L of milk was used during the day.

2. Radha spent on a movie $= \frac{1}{2}$ of her packet money

She spent on pen $= \frac{1}{4}$ of her packet money

She spent total function of her packet money $= \frac{1}{2} + \frac{1}{4}$

$= \frac{1 \times 2 + 1 \times 1}{4}$

$= \frac{2 + 1}{4} = \frac{3}{4}$

She spent $\frac{3}{4}$ of her packet money over all.

3. Length of rope $= 5\frac{1}{2}$ m

Length of rope was cut $= 3\frac{2}{3}$ m

Left rope $= 5\frac{1}{2} - 3\frac{2}{3}$

$= \frac{11}{2} - \frac{11}{3}$

$= \frac{11 \times 3 - 11 \times 2}{6}$

$= \frac{33 - 22}{6} = \frac{11}{6}$ m or $1\frac{5}{6}$ m

So, $1\frac{5}{6}$ m of rope was left.

4. Quantity of petrol on Sunday morning=6 L

Petrol left on Sunday night $= 1\frac{1}{4}$ L

Petrol was used $= 6 - 1\frac{1}{4}$

$= \frac{6}{1} - \frac{5}{4}$

$= \frac{6 \times 4 - 5 \times 1}{4}$

$= \frac{24 - 5}{4}$

$= \frac{19}{4}$ L or $4\frac{3}{4}$ L

So, $4\frac{3}{4}$ litre petrol was used.

5. Shivani did homework on Saturday $= \frac{3}{8}$

Shivani did homework on Sunday $= \frac{1}{4}$

Total home work she did $= \frac{3}{8} + \frac{1}{4}$

$= \frac{3 \times 1 + 1 \times 2}{8}$

$= \frac{3 + 2}{8} = \frac{5}{8}$

So, she did $\frac{5}{8}$ of homework over the weekend.

Exercise 5 (e)

1. Find the product and write the answer in lowest form.

Ans. a. $\mathbf{5 \times \frac{12}{20}}$ b. $\mathbf{3 \times 2\frac{2}{15}}$ c. $\mathbf{5\frac{1}{8} \times 4}$ d. $\mathbf{\frac{11}{24} \times 32}$

$= \frac{5 \times 12}{20}$ $= \frac{3}{1} \times \frac{32}{15}$ $= \frac{41}{8} \times 4$ $= \frac{11 \times 32}{24}$

$= 3$ $= \frac{3 \times 32}{15}$ $= \frac{41 \times 4}{8}$ $= \frac{44}{3}$

$= \frac{32}{5}$ or $6\frac{2}{5}$ $= \frac{41}{2} = 20\frac{1}{2} = 14\frac{2}{3}$

e. $\mathbf{6\frac{1}{16} \times 36}$

$= \frac{97}{16} \times 36$

$= \frac{97 \times 36}{16}$

$= \frac{873}{4} = 218\frac{1}{4}$

f. $\mathbf{24 \times 3\frac{1}{4}}$

$= \frac{24}{1} \times \frac{13}{4}$

$= \frac{24 \times 13}{4}$

$= 78$

g. $\mathbf{\frac{9}{22} \times 33}$

$= \frac{9 \times 33}{22}$

$= \frac{99}{2}$

$= 49\frac{1}{2}$

h. $\mathbf{10 \times 2\frac{1}{5}}$

$= \frac{10}{1} \times \frac{11}{5}$

$= \frac{10 \times 11}{5}$

$= 22$

2. Find.

Ans. a. $\mathbf{\frac{4}{11}}$ **of 55**

$= \frac{4}{11} \times 55$

$= \frac{4 \times 55}{11}$

$= 20$

b. $\mathbf{\frac{4}{15}}$ **of** $\mathbf{\frac{20}{21}}$

$= \frac{4}{15} \times \frac{20}{21}$

$= \frac{4 \times 20}{15 \times 21}$

$= \frac{16}{63}$

c. $\mathbf{1\frac{1}{2}}$ **of** $\mathbf{3\frac{4}{5}}$

$= \frac{3}{2} \times \frac{19}{5}$

$= \frac{3 \times 19}{10}$

$= \frac{57}{10} = 5\frac{7}{10}$

d. $\mathbf{\frac{3}{8}}$ **of 36**

$= \frac{3}{8} \times 36$

$= \frac{3 \times 36}{8} = \frac{27}{2} = 13\frac{1}{2}$

e. $\mathbf{\frac{24}{25}}$ **of** $\mathbf{\frac{35}{36}}$

$= \frac{24}{25} \times \frac{35}{36}$

$= \frac{24 \times 35}{25 \times 36} = \frac{14}{15}$

f. $\mathbf{\frac{7}{8}}$ **of** $\mathbf{\frac{16}{21}}$

$= \frac{7}{8} \times \frac{16}{21}$

$= \frac{7 \times 16}{8 \times 21} = \frac{2}{3}$

3. Multiply and write the answer in lowest form.

Ans. a. $\mathbf{\frac{1}{9} \times \frac{3}{2}}$

$= \frac{3}{18}$

$= \frac{1}{6}$

b. $\mathbf{\frac{2}{7} \times \frac{8}{9} \times \frac{3}{4}}$

$= \frac{2 \times 8 \times 3}{7 \times 9 \times 4}$

$= \frac{4}{21}$

c. $\mathbf{3\frac{3}{5} \times 5\frac{1}{2}}$

$= \frac{18}{5} \times \frac{11}{2}$

$= \frac{18 \times 11}{5 \times 2}$

$= \frac{99}{5} = 19\frac{4}{5}$

d. $\mathbf{1\frac{2}{7} \times 3\frac{4}{5}}$

$= \frac{9}{7} \times \frac{19}{5}$

$= \frac{171}{35} = 4\frac{31}{35}$

e. $\mathbf{10\frac{3}{8} \times 3\frac{1}{9}}$

$= \frac{83}{8} \times \frac{38}{9}$

$= \frac{83 \times 28}{8 \times 9}$

$= \frac{581}{18} = 32\frac{5}{18}$

f. $\mathbf{\frac{1}{8} \times \frac{1}{6} \times 1\frac{1}{2}}$

$= \frac{1 \times 1 \times 3}{8 \times 6 \times 2}$

$= \frac{1}{32}$

g. $\mathbf{1\frac{1}{4} \times \frac{2}{5} \times \frac{4}{5}}$

$= \frac{5}{4} \times \frac{2}{5} \times \frac{4}{5}$

$= \frac{5 \times 2 \times 4}{4 \times 5 \times 5} = \frac{2}{5}$

h. $\mathbf{1\frac{1}{2} \times 2\frac{1}{3} \times 3\frac{1}{4}}$

$= \frac{3}{2} \times \frac{7}{3} \times \frac{13}{4}$

$= \frac{7 \times 3 \times 13}{2 \times 3 \times 4} = \frac{91}{8} = 11\frac{3}{8}$

4. Fill in the blanks :

Ans. a. $\frac{11}{15} \times 0 = \mathbf{0}$

b. $\frac{7}{9} \times \frac{2}{5} = \frac{2}{5} \times \mathbf{\frac{7}{9}} = \frac{14}{45}$

c. $\frac{8}{7} \times \frac{1}{5} = \mathbf{\frac{1}{5}} \times \frac{8}{7}$

d. $\frac{11}{17} \times 1 = \mathbf{\frac{11}{17}}$

e. $\frac{8}{19} \times \mathbf{1} = \frac{8}{19}$

f. $0 \times \frac{25}{27} = \mathbf{0}$

g. $\left(\frac{2}{3} \times \frac{4}{5}\right) \times \frac{1}{4} = \frac{2}{3} \times \left(\mathbf{\frac{4}{5}} \times \frac{1}{4}\right) = \mathbf{\frac{2}{15}}$

Mental Maths

Write the multiplicative inverse of these fractions.

Ans. a. $\frac{2}{5}$ $\mathbf{\frac{5}{2}}$

b. $\frac{4}{7}$ $\mathbf{\frac{7}{4}}$

c. $\frac{1}{2}$ $\mathbf{\frac{2}{1}}$

d. $\frac{6}{7}$ $\mathbf{\frac{7}{6}}$

e. $\frac{1}{3}$ $\mathbf{\frac{3}{1}}$

f. $\frac{6}{5}$ $\mathbf{\frac{5}{6}}$

Exercise 5 (f)

1. Find the reciprocal (or multiplicative inverse) of each of the following :

Ans. a. The reciprocal (or multiplicative inverse) of $\frac{21}{8}$ is $\frac{8}{21}$.

b. The reciprocal (or multiplicative inverse) of $\frac{12}{17}$ is $\frac{17}{12}$.

c. The reciprocal (or multiplicative inverse) of $\frac{11}{3}$ is $\frac{3}{11}$.

d. The reciprocal (or multiplicative inverse) of $\frac{2}{5}$ is $\frac{5}{2}$.

e. The reciprocal (or multiplicative inverse) of 1 is 1.

f. The reciprocal (or multiplicative inverse) of $2\frac{1}{7}$ is $\frac{7}{15}$.

g. The reciprocal (or multiplicative inverse) of $\frac{15}{23}$ is $\frac{23}{15}$.

h. The reciprocal (or multiplicative inverse) of $\frac{5}{11}$ is $\frac{11}{5}$.

2. Divide and write the answer in the lowest term :

Ans. a. $\mathbf{\frac{5}{9}}$ **by 15**

$= \frac{5}{9} \div \frac{15}{1}$

$= \frac{5}{9} \times \frac{1}{15}$

$= \frac{5 \times 1}{9 \times 15} = \frac{1}{27}$

b. $\mathbf{\frac{12}{13}}$ **by 9**

$= \frac{12}{13} \div \frac{9}{1}$

$= \frac{12}{13} \times \frac{1}{9}$

$= \frac{4}{39}$

c. $\mathbf{\frac{1}{3}}$ **by 4**

$= \frac{1}{3} \div 4$

$= \frac{1}{3} \times \frac{1}{4}$

$= \frac{1}{12}$

d. **6 by 8**

$= 6 \div 8$

$= \frac{6}{1} \times \frac{1}{8}$

$= \frac{6 \times 1}{1 \times 8} = \frac{3}{4}$

e. **48 by** $\mathbf{2\frac{2}{5}}$

$= 48 \div \frac{12}{5}$

$= \frac{48}{1} \times \frac{5}{12}$

$= \frac{48 \times 5}{1 \times 12} = 20$

f. **77 by** $\mathbf{\frac{11}{3}}$

$= 77 \div \frac{11}{3}$

$= \frac{77 \times 3}{1 \times 11}$

$= \frac{21}{1}$

g. **72 by $\frac{6}{7}$**

$= 72 \div \frac{6}{7} = \frac{72 \times 7}{1 \times 6} = 84$

h. **$\frac{11}{4}$ by 55**

$= \frac{11}{4} \div 55 = \frac{11}{4} \times \frac{1}{55} = \frac{1}{20}$

3. Divide the following fractions :

Ans. a. $\frac{5}{9} \div \frac{15}{36}$

$= \frac{5}{9} \times \frac{36}{15}$

$= \frac{4}{3} = 1\frac{1}{3}$

b. $\frac{12}{13} \div \frac{1}{52}$

$= \frac{12}{13} \times \frac{52}{1}$

$= 48$

c. $1\frac{2}{11} \div 2\frac{5}{22}$

$= \frac{13}{11} \div \frac{41}{22}$

$= \frac{13}{11} \times \frac{22}{49} = \frac{26}{49}$

d. $8\frac{2}{5} \div 2\frac{2}{15}$

$= \frac{42}{5} \div \frac{32}{15}$

$= \frac{42}{5} \times \frac{15}{32}$

$= \frac{63}{16} = 3\frac{15}{16}$

e. $4\frac{1}{2} \div 4\frac{1}{5}$

$= \frac{9}{2} \div \frac{21}{5}$

$= \frac{9}{2} \times \frac{5}{21}$

$= \frac{15}{14} = 1\frac{1}{14}$

f. $7\frac{3}{5} \div 19$

$= \frac{38}{5} \div \frac{19}{1}$

$= \frac{38}{5} \times \frac{1}{19}$

$= \frac{2}{5}$

g. $9\frac{5}{6} \div 5\frac{1}{6}$

$= \frac{59}{6} \div \frac{31}{6}$

$= \frac{59}{6} \times \frac{6}{31} = \frac{59}{31} = 1\frac{28}{31}$

h. $1\frac{1}{8} \div \frac{2}{7}$

$= \frac{9}{8} \div \frac{2}{7}$

$= \frac{9}{8} \times \frac{7}{2} = \frac{63}{16} = 3\frac{15}{16}$

4. Fill in the boxes to complete the following divisions :

Ans. a. $0 \div \frac{9}{17} = 0$

b. $\frac{7}{9} \div \frac{7}{9} = 1$

c. $\frac{3}{5} \div \frac{3}{5} = 1$

d. $2\frac{1}{3} \div 1 = 2\frac{1}{3}$

e. $0 \div \frac{3}{7} = 0$

f. $1 \div \frac{6}{11} = \frac{11}{6}$

Exercise 6 (g)

Solve these story sums.

Ans. 1. To make 1 chocolate, cocoa is needed $= \frac{3}{4}$ cups

To make 20 chocolate, cocoa is needed $= \frac{3}{4} \times 20$ cups

$= \frac{3 \times 20}{4} = 15$ cups

So, 15 cups cocoa powder is required to make 20 chocolates.

2. A truck covered distance in 1 hr $= 60\frac{1}{2}$ km

A truck covered distance in $4\frac{2}{5}$ hrs $= 60\frac{1}{2} \times 4\frac{2}{5}$

$= \frac{121}{2} \times \frac{22}{5}$

$= \frac{1331}{5} = 266\frac{1}{5}$ km

So, It will travel $266\frac{1}{5}$ km in $4\frac{2}{5}$ hours.

3. The cost of $3\frac{1}{2}$ kg mangoes = ` $157\frac{1}{2}$

So, cost of 1 kg mangoes = ` $157\frac{1}{2} \div 3\frac{1}{2}$

= ` $\frac{315}{2} \div \frac{7}{2}$

= ` $\frac{315}{2} \times \frac{2}{7}$ = ` 45

So, the cost of 1 kg mangoes = ` 45

4. Paint needed for 1 square metre of wall $= 2\frac{3}{4}$ L

Paint needed for square metre of wall $= 2\frac{3}{4} \times 3\frac{1}{2}$ L

$= \frac{11}{4} \times \frac{7}{2}$ L

$= \frac{77}{8}$L $= 9\frac{5}{8}$ L

So, $9\frac{5}{8}$ L paint is needed for $3\frac{1}{2}$ square metre of the wall.

5. Total length of rope = 30 m

length of each piece = $2\frac{1}{2}$ m

No. of pieces = $30 \div 2\frac{1}{2}$

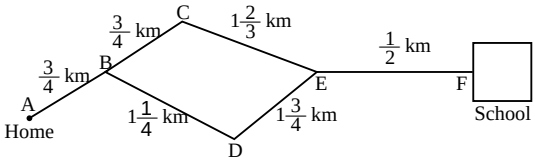
= $30 \div \frac{5}{2}$

= $\frac{30}{1} \times \frac{2}{5}$ = 12 pieces

So, Sumit will get 12 pieces of rope.

Fun with Maths

Ans. **Ans.**Who travels the longest route? **Ravi**



There are two routes to school. Ravi and Naina cycle to school everyday. Ravi takes the route ABDEF and Naina takes the other. Who travels the lesser distance to reach school? **Naina**

MCQs

Choose the correct option.

Ans. 1. a 2. a 3. c 4. b

Chapter

6 Decimals

Exercise 6 (a)

1. Write the decimal numbers for the shaded parts :

Ans. a. 0.8 b. 0.52 c. 0.83

2. Write the decimals :

Ans. a. 0.5 b. 3.34 c. 200.001

d. 39.637 e. 1000.8 f. 0.006

3. Write in words :

Ans. a. Zero point nine four three b. Forty one point zero seven

c. Nine point zero zero eight
d. Fifty eight point zero seven six
e. Zero point six f. Eight point seven three

4. Write the place value of the circled digits :

Ans. a. 70 b. 2 c. d.

5. Write in the expanded form :

Ans. a. **57.69** = $50 + 7 + \frac{6}{10} + \frac{9}{100}$ b. **24.306** = $20 + 4 + \frac{3}{10} + \frac{6}{1000}$

c. **130.456** = $100 + 30 + \frac{6}{10} + \frac{5}{100} + \frac{6}{1000}$

d. **99.075** = $90 + 9 + \frac{7}{100} + \frac{5}{1000}$

6. Write the following in the short form :

Ans. a. 2.3 b. 15.37 c. 372.09
d. 7052.089 e. 230.007

Mental Maths

How many decimal places are there? Write in the box.

Ans. 1. 1 2. 2 3. 3 4. 3

Exercise 6 (b)

1. Write the following in decimal form :

Ans. a. $\frac{20}{100}$ = 0.2 b. $\frac{8}{10}$ = 0.8 c. $\frac{36}{1000}$ = 0.036 d. $\frac{8}{10000}$ = 0.0008

e. $\frac{575}{1000}$ = 0.575 f. $\frac{384}{10}$ = 38.4 g. $\frac{3846}{100}$ = 38.46 h. $\frac{3941}{1000}$ = 3.941

2. Express in the fractional form :

Ans. a. **0.47** = $\frac{4}{10} + \frac{7}{100}$

b. **24.455** = $20 + 4 + \frac{4}{10} + \frac{5}{100} + \frac{7}{1000}$

c. **801.53** = $800 + 0 + 1 + \frac{5}{10} + \frac{3}{100}$

d. **1400.25** = $1000 + 400 + 0 + 0 + \frac{2}{10} + \frac{5}{100}$

e. **69.380** = $60 + 9 + \frac{3}{10} + \frac{8}{100}$

f. **71.0053** = $70 + 1 + \frac{5}{1000} + \frac{3}{10000}$

g. **0.837** = $\frac{8}{10} + \frac{3}{100} + \frac{7}{1000}$

h. **1.483** = $\frac{4}{10} + \frac{8}{100} + \frac{3}{1000}$

3. Circle the unlike fractions :

Ans. a. 0.071, 1.001, **56.01,** 561.008 b. 8.6, **5.38,** 23.1, 11.4

c. 14.99, 9.62, **483.3,** 15.34 d. **6.8,** 5.08, 5.81, 61.01

4. Write the equivalent decimals :

Ans. a. 0.8 = 0.80 = **0.800** b. 1.5 = 1.50 = **1.500**

c. 3.9 = **3.90** = **3.900** d. **0.5** = 0.50 = 0.500

e. 9.8 = **9.80** = 9.800 f. **4.2** = **4.20** = 4.200

5. Fill in the blanks using <, > or = :

Ans. a. 54.7 > 35.7 b. 59.075 < 59.75 c. 6.8 > 6.5

d. 8.03 > 8.003 e. 9.10 = 9.1 f. 7.003 < 7.03

6. Arrange the following decimals in the ascending order :

Ans. a. **11.1, 11.21, 11.001**

Ascending order : 11.001 < 11.1 < 11.21

b. **20.3, 30.2, 23.25**

Ascending order : 20.3 < 23.25 < 30.2

c. **9.82, 9.9, 9.795**

Ascending order : 9.795 < 9.82 < 9.9

d. **8.86, 8.094, 8.9**

Ascending order : 8.094 < 8.86 < 8.9

7. Arrange the following in descending order :

Ans. a. **0.046, 4.06, 4.36, 4.236**

Descending order : 4.36 > 4.236 > 4.06 > 0.046

b. **6.38, 6.234, 16.234, 31.46**
Descending order : 31.46 > 16.234 > 6.38 > 6.234

c. **48.231, 46.236, 1.64, 36.23**
Descending order : 48.231 > 46.236 > 36.23 > 1.64

d. **69.84, 7.68, 7.063, 16.09**
Descending order : 69.84 > 16.09 > 7.68 > 7.063

Exercise 6 (c)

1. Add :

Ans. a. **17.2 and 5.2**
= 17.2 + 5.2
= 22.4

```
  17.2
+ 05.2
  22.4
```

b. **11.4 + 0.86 + 29.55**
= 41.81

```
  11.40
  00.86
+ 29.55
  41.81
```

c. **17.80 + 15.50 + 85.96**
= 119.26

```
  17.80
  15.50
+ 85.96
 119.26
```

d. **1.001 + 2.92 + 0.00292**
= 3.92392

```
  1.001
  2.920
+ 0.00292
  3.92392
```

e. **7.65 + 19.15 + 0.75**
= 27.55

```
  7.65
 19.15
+  0.75
 27.55
```

f. **15.967 + 13.293 + 5.005**
= 34.265

```
 15.967
 13.293
+ 5.005
 34.265
```

g. **1.369 + 7.28 + 6.093**
= 14.742

```
  1.369
  7.28
+ 6.093
 14.742
```

h. **38.505 + 0.385 + 291.6765**
= 330.5665

```
  38.505
   0.385
+ 291.6765
 330.5665
```

2. Subtract :

Ans. a. **15.963 – 13.89**
= 2.073

```
  15.963
– 13.890
   2.073
```

b. **37.750 – 25.850**
= 11.90

```
  37.750
– 25.850
  11.90
```

c. **9 – 7.473**

```
  9.000
– 7.473
  1.527
```

d. **113 – 14.101**

```
  113.000
– 14.101
  98.899
```

e. **18.95 – 15.86**
= 3.09

```
  18.95
– 15.86
   3.09
```

f. **56.813 – 27.303**
= 29.510

```
  56.813
– 27.303
  29.510
```

g. **63.125 – 28.350**
= 34.775

```
  63.125
– 28.350
  34.775
```

h. **70 – 45.904**
= 24.096

```
  70.000
– 45.904
  24.096
```

i. **400 – 350.937**
= 49.063

```
  400.000
– 350.937
   49.063
```

3. Find the sum or difference :

Ans. a.

```
  27.5
+ 51.9
  79.4
```

b.

```
  55.305
+ 165.290
  220.595
```

c.

```
  242.518
– 139.506
  103.012
```

d.

```
  220.5
– 160.365
   60.135
```

Mental Maths

Place the decimal point at the correct position in the following products.

Ans. a. 6.3 × 5 = **31.5**
b. 16 × 2.47 = **39.52**
c. 12 × 3.062 = **36.744**
d. 6.75 × 3.8 = **25.650**

Exercise 6 (d)

1. Multiply :

Ans. a. 29.09 × 10 = **290.9**
b. 7.25 × 10 = **72.5**
c. 0.2045 × 100 = **20.45**
d. 3.835 × 100 = **383.5**
e. 28.625 × 1000 = **28625**
f. 0.05 × 1000 = **50**
g. 0.003 × 100 = **0.3**
h. 0.12 × 10000 = **1200**
i. 1.098 × 1000 = **1098**

2. Find the product :

Ans. a. **8.6 × 1.4**
= 12.04

```
   8.6
 × 1.4
 3.44
 8.6×
12.04
```

b. **36.5 × 5**
= 182.5

```
  36.5
   × 5
 182.5
```

c. **0.75 × 0.29**
= 0.2175

```
   0.75
  ×0.29
 0.0675
 0.150×
 0.2175
```

d. **0.478 × 17.6**
= 8.4128

```
   0.478
  ×17.6
   0.286
 3.346×
 4.78××
 8.4128
```

e. **11.11 × 92**
= 1022.12

```
   11.11
   ×92
   22.22
 999.9×
 1022.12
```

f. **5.2125 × 19**
= 99.0375

```
   5.2125
      ×19
 46.9125
 52.125×
 99.0375
```

g. **11.11 × 1.1 × 0.1**

```
   11.11
   ×1.1
    1.111
 11.11×
 12.221
```

```
 12.221
   ×0.1
 1.2221
```

= 12.221 × 0.1 = 1.2221

h. **1.11 × 2.2 × 0.9**

```
   1.11
   ×2.2
 0.222
 2.22×
 2.442
```

```
   2.442
   ×0.9
 2.1978
```

= 2.442 × 0.9 = 2.1978

i. **0.93 × 0.84**
= 0.7812

```
   0.93
   0.84
 0.0372
 0.744×
 0.7812
```

Exercise 6 (e)

1. Divide :

Ans. a. **8.1 ÷ 8** = 1.0125

```
8) 8.1 (1.0125
  – 8
    10
   – 8
    20
  – 16
     40
   – 40
      x
```

b. **72.93 ÷ 5** = 14.586

```
5) 72.93 (14.586
  – 5
    20
  – 20
     29
   – 25
      43
    – 40
       30
     – 30
        x
```

c. **6.14 ÷ 5**
= 1.228

```
5) 6.14 (1.228
 – 5
   11
 – 10
    14
  – 10
     40
   – 40
      x
```

d. **91.89 ÷ 2**
= 45.945

```
2) 91.89 (45.945
 – 8
   11
 – 10
    18
  – 18
      9
    – 8
     10
   –10
      x
```

e. **0.1365 ÷ 2**
= 0.06825

```
2) 0.1365 (0.06825
 – 12
    16
  – 16
      5
    – 4
     10
   – 10
      x
```

f. **0.153 ÷ 6**
= 0.0255

```
6) 0.153 (0.0255
 – 12
    33
 – 30
      30
   – 30
      x
```

g. **45.7 ÷ 8**
= 5.7125

```
8)  45.7 (5.7125
 – 40
   57
 – 56
    10
   – 8
    20
  – 16
     40
   – 40
      x
```

h. **587.298 ÷ 15**
= 39.1532

```
15) 587.298 (39.1532
 – 45
    137
 – 135
      22
   – 15
       79
    – 75
        48
     – 45
        30
     – 30
         x
```

2. Write the quotient :

Ans. a. 9.1 ÷ 10 = **0.91**
b. 0.8 ÷ 10 = **0.08**
c. 1.45 ÷ 100 = **0.0145**
d. 3.71 ÷ 1000 = **0.00371**
e. 33.5 ÷ 100 = **0.335**
f. 0.6 ÷ 1000 = **0.006**
g. 67.3 ÷ 10 = **6.73**
h. 8.75 ÷ 100 = **0.0875**

3. Divide :

Ans. a. **22 ÷ 0.11**

$$\frac{22}{0.11} \times \frac{100}{100}$$

$$= \frac{2200}{11} = 200$$

```
11) 2200 (200
   – 22
      0
    – 0
      0
    – 0
      x
```

b. **6.25 ÷ 0.5**

$$\frac{6.25}{0.5} \times \frac{10}{10}$$

$$= \frac{62.5}{5} = 12.5$$

```
5) 62.5 (12.5
  – 5
   12
  – 10
    25
  – 25
    x
```

c. **6.4 ÷ 1.6**

$$\frac{6.4}{1.6} \times \frac{10}{10}$$

$$= \frac{64}{16} = 4$$

```
16) 64 (4
   – 64
     x
```

d. **109.02 ÷ 2.3**

$$\frac{109.02}{2.3} \times \frac{10}{10}$$

$$= \frac{1090.2}{23} = 47.4$$

```
23) 1090.2 (47.4
   – 92
     170
   – 161
       92
     – 92
        x
```

e. **1.404 ÷ 0.108**

$$\frac{1.404}{0.108} \times \frac{1000}{1000}$$

$$= \frac{1404}{108} = 13$$

f. **1.8 ÷ 0.2**

$$\frac{1.8}{0.2} \times \frac{10}{10}$$

$$= \frac{18}{2} = 9$$

```
108) 1404 (13
   – 108
     324
   – 324
       x
```

```
2) 18 (9
  – 18
    x
```

Exercise 6 (f)

Ans. 1. Cost of 1 toy = ` 25.35
Cost of 45 toys = ` 25.35 × 45
= ` **1140.75**
So, cost of 45 toys will be `1140.75.

```
   25.35
   × 45
  126.75
 1014.0×
 1140.75
```

2. It rained on Monday = 3.5 cm
It rained on Tuesday = 2.25 cm
It rained on Wednesday = + 1.75 cm
Total amount of rain = **7.50 cm**
It rained 7.50 cm in three days.

3. Cost of 1 litre of petrol = `75.50
\ Cost of 4 litres of petrol = 4 × 75.50=`302
So, the cost of 4 litres of petrol is `302.

4. Sushant had money in his pocket= ` 55.50
He spent money = – ` 27.00
Money left = ` **28.50**
He has `28.50 left with him.

5. Meena had money = `100.00
She bought a baseball for = – ` 75.75
Money left = **`24.25**
So, he had `24.25 left with her.

6. A bike covers distance in 1 hour = 40.5 km
It covers distance in 18 hours = 40.5 × 18
= 729 km
So, It will cover 729 km in 18 hours.

```
   40.5
   × 18
  324.0
 405.×
 729.0
```

7. Product of two numbers = 4832.25
One no. = 25
Other no. = 4832.25 ÷ 25
= 193.29
So, other no. is 193.29.

```
25) 4832.25 (193.29
  – 25
    233
  – 225
      82
    – 75
       72
     – 50
       225
     – 225
         x
```

8. The cost of 25 chocolates = ` 63.50
Cost of one chocolates = ` 63.50 ÷ 25
= ` 2.54
So, cost of one chocolate `2.54.

```
25) 63.50 (2.54
  – 50
    135
  – 125
      100
    – 100
        x
```

MCQs

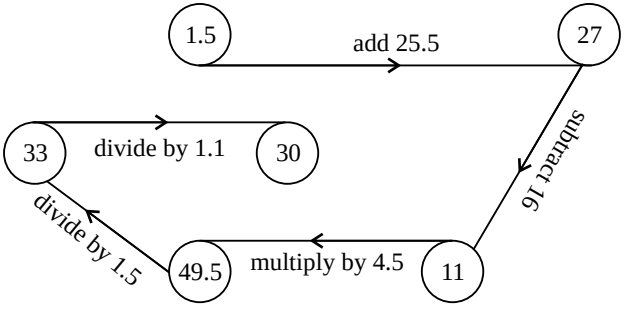
Choose the correct option.

Ans. 1. c 2. d 3. a 4. a

Fun with Maths

Follow the arrow marks and simplify the following as indicated to fill in the blanks.

Ans.



Chapter

7 Simplification

Exercise 7 (a)

1. Simplify :

Ans. a. $\mathbf{20 + 40 \div 5}$
$= 20 + 8 = 28$

b. $\mathbf{86 - 28 \div 7}$
$= 86 - 4 = 82$

c. $\mathbf{29 - 4 \times 6}$
$= 29 - 24 = 24$

d. $\mathbf{7 \times 9 \times 1 - 54 \div 6}$
$= 7 \times 9 \times 1 - 9$
$= 63 - 9 = 54$

e. $\mathbf{60 \times 2 + 18 \div 2 - 43}$
$= 60 \times 2 + 9 - 43$
$= 120 + 9 - 43$
$= 129 - 43 = 86$

f. $\mathbf{56 \div 4 + 12 \times 2}$
$= 14 + 12 \times 2$
$= 14 + 24 = 38$

g. $\mathbf{3\frac{1}{2} + 2\frac{1}{3} - 4}$
$= \frac{7}{2} + \frac{7}{3} - \frac{4}{1}$
$= \frac{7 \times 3 + 7 \times 2 - 4 \times 6}{6}$
$= \frac{21 + 14 - 24}{6} = \frac{35 - 24}{6} = \frac{11}{6}$

h. $\mathbf{29.236 \times 10 - 17.95 + 4.8}$
$= 292.36 - 17.95 + 4.8$
$= 292.36 + 4.8 - 17.95$
$= 297.16 - 17.95$
$= 279.21$

2. Fill in the correct symbol +, –, × or ÷ to make the sum correct :

Ans. a. $6 \div 2 - 1 = 2$

b. $8 \times 3 - 6 \div 2 = 21$

c. $15 \times 4 + 24 \div 3 = 68$

d. $6 + 8 \div 42 \div 6 = 7$

e. $15 \div 5 + 4 = 7$

f. $4 \times 3 + 2 = 14$

Exercise 7 (b)

1. Simplify using BODMAS rule and fill in the blanks :

Ans. a. $\mathbf{64 \div 16 \times (3 + 2)}$
$= 64 \div 16 \times 5$
$= 4 \times 5 = 20$

b. $\mathbf{\left(\frac{2}{5} \times \frac{12}{14}\right) \div \frac{3}{4}}$
$= \frac{12}{35} \div \frac{3}{4} = \frac{12}{35} \times \frac{4}{3} = \frac{16}{25}$

c. **3 + [{(4 ÷ 4) + 1} × 8**
= 3 + [{1 + 1} × 8]
= 3 + [2 × 8]

d. **{5 + (48 ÷ 12)} – 2 × 3**
= {5 + 4} – 2 × 3
= 9 – 2 × 3 = 9 – 6 = 3

e. **17 + [8 – {5 + (10 ÷ 5)}]**
= 17 + [8 – {5 + 2}]
= 17 + [8 – 7]
= 17 + 1 = 18
3 + 16 = 19

f. **[32 + {44 – (32 ÷ 4)}]**
= [32 + {44 – 8}]
= [32 + 36] = 68

h. **[(2.321 + 125.779) – 6.109 × 9.54]**
= [128.100 – 6.109 × 9.54]
= [128.100 – 58.27986] = 69.82014

2. Simplify the following problems :

Ans. a. **(32768 ÷ 64) ÷ 64**
= 512 ÷ 64 = 8

b. **2800 – 400 × (350 ÷ 50)**
= 2800 – 400 × 7
= 2800 – 2800 = 0

c. **9210 + 648 ÷ 8 × (2015 – 999)**
= 9210 + 648 ÷ 8 × 1016
= 9210 + 81 × 1016
= 9210 + 82296 = 91506

d. **892 × 65 – 15 × 632 + 4,709**
= 57980 – 9480 + 4709
= 62689 – 9480
= 57980 + 4709 – 9480
= 53209

e. **(10146 ÷ 19) ÷ 2 + 15 × 48 – 400 + 100**
= 534 ÷ 2 + 15 × 48 – 400 + 100
= 267 + 15 × 48 – 400 + 100
= 267 + 720 + 100 – 400
= 267 + 720 – 400 + 100
= 1087 – 400 = 687

f. **684 ÷ 12 × 132 – 32 + 520 ÷ 10**
= 57 × 132 – 32 + 52
= 7524 + 52 – 32
= 7524 – 32 + 52
= 7576 – 32 = 7544

g. $\mathbf{1\frac{1}{3} \div \frac{5}{6} \times 1\frac{1}{2} - \frac{2}{7}}$

$= \frac{4}{3} \div \frac{5}{6} \times \frac{3}{2} - \frac{2}{7} = \frac{4}{3} \times \frac{6}{5} \times \frac{3}{2} - \frac{2}{7}$

$= \frac{12}{5} - \frac{2}{7} = \frac{12 \times 7 - 2 \times 5}{35} = \frac{84 - 10}{35} = \frac{74}{35}$

h. **[0.25 × 0.47 ÷ 0.5 + 5.320 – 5]**

$= 0.25 \times 0.94 + 5.320 - 5 \quad = 0.235 + 5.320 - 5$

$= 5.555 - 5 \quad = 0.555$

MCQs

Choose the correct option.

Ans. 1. c 2. a 3. c 4. a

Fun with Maths

Simplify the following sums and match the answer the correct sum.

Ans.

a. $40 \div 2 + 1$

b. $1.2 + 1.2 + 0.2$

c. $6 + \frac{1}{3}$ of 6

d. $10 \div 5 \times 3$

e. $999 \div [56 \div \{53 + (19 - 16)\}]$

f. $5\frac{1}{2} \div \left[\left\{\frac{1}{4} - \left(\frac{1}{6} - \frac{1}{30}\right)\right\} + \frac{1}{15}\right]$

72, 8, 21, 6, 30, 999

Chapter

8 Multiples and Factors

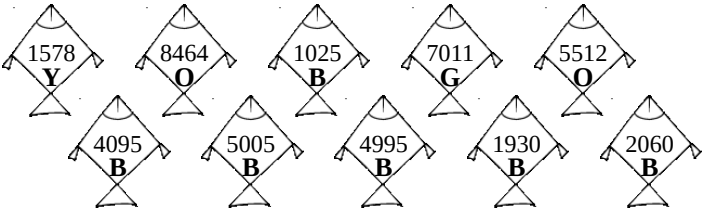
1. Colour the following number of kites by using given colour code :

Ans. Numbers divisible by 2 and 3 both - **Yellow**

Numbers divisible by 2 and 4 both - **Orange**

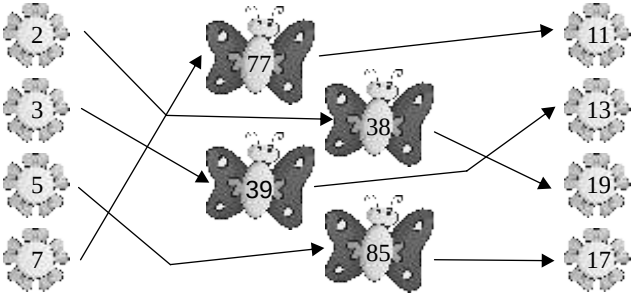
Numbers divisible by only 5 - **Blue**

Numbers divisible by 3 and 9 both - **Green**



2. The numbers in flower A and flowers B are the factors of the number in Butterfly. Match the flowers with correct butterfly :

Ans. Flowers A **Flowers B**



Mental Maths

Write the :

Ans. 1. 4,8,12 2. 7,21,35,49,63 3. 30
4. 9 5. 5,15

Maths in my life

Ans.

Number of Children In Each Group	Number of Groups
3	10
2	15
5	6
6	5
30	1

Exercise 8 (a)

1. Which of the following are even numbers?

Ans. All no. which are divisible by 2 are called even no.
So, even no. are = 16, 38, 44, 48, 68, 84, 92

2. List all the prime numbers between :

Ans. a. **10 and 30**
Prime no. = 11, 13, 17, 19, 23, 29
b. **42 and 60**

Prime no. = 43, 47, 53, 59

c. **75 and 95**

Prime no. = 79, 83, 89

3. Which of the following pair of numbers are twin primes?

Ans. a. 5, 7 b. 27, 31 c. 71, 73 d. 41, 47

4. Which of the following pair are co-primes?

Ans. a. 16 and 21 b. 12 and 35 c. 24 and 39

5. Write the factors of the following numbers :

Ans. a. **46**

1 × 46

2 × 23

Factors of 46 = 1, 2, 23, 46

b. **85**

1 × 85 = 85

5 × 17 = 85

Factors of 85 = 1, 5, 17, 85

c. **124**

1 × 124 = 124

2 × 62 = 124

4 × 31 = 124

Factors of 124 = 1, 2, 4, 31, 62, 124

d. **280**

1 × 280 = 280

2 × 140 = 280

4 × 70 = 280

5 × 56 = 280

7 × 40 = 280

8 × 35 = 280

10 × 28 = 280

14 × 20 = 280

Factors of 280 = 1, 2, 4, 5, 7, 8, 10, 14, 20, 28, 35, 40, 56, 70, 140, 280

6. Complete the following table and encircle the common multiples.

Ans.

20 multiples of 2	10 multiples of 8	10 multiples of 12
2, 4, 6, 8, 10 12, 14, 16, 18, 20 22, 24, 26, 28, 30 32, 34, 36, 38, 40	8, 16, 24, 32 40, 48, 56, 64 72, 80	12, 24, 36, 48 60, 72, 84, 96 108, 120

Exercise 8 (b)

1. Check the divisibility of the following numbers by 2, 3, 4, 5, 6, 8, 10 and 11. Colour the box green if divisible and red if not divisible :

Ans.

Number	2	3	4	5	6	8	10	11
42,620	3	7	3	3	7	7	3	7
52,800	3	3	3	3	3	3	3	3
98,53,302	3	3	7	7	3	7	7	7
85,175	7	7	7	3	7	7	7	7
37,290	3	3	7	3	3	7	3	3
6,381	7	3	7	7	7	7	7	7
2,26,972	3	7	3	7	7	7	7	7

2. Test which of the following numbers are divisible by 9 :

Ans. a. **8108**

8 + 1 + 0 + 8 = 17

Which is not divisible by 9,

So, 8108 is not divisible by 9.

b. **72432**

7 + 2 + 4 + 3 + 2 = 18

Which is divisible by 9,

So, 72432 is divisible by 9.

c. **64**

6 + 4 = 10

Which is divisible by 9,

So, 64 is not divisible by 9.

d. **432981**

4 + 3 + 2 + 9 + 8 + 1 = 27

Which is divisible by 9,

So, 432981 is divisible by 9.

e. **174331**

1 + 7 + 4 + 3 + 3 + 1 = 19

Which is not divisible by 9,

So, 174331 is not divisible by 9.

f. **2872364**

2 + 8 + 7 + 2 + 3 + 6 + 4 = 32

Which is not divisible by 9,

So, 2872364 is not divisible by 9.

3. Test of the following numbers are divisible by 11 :

Ans. a. **3663**

Sum of the digits in the odd places.

= 3 + 6

Sum of the digits in the even places

= 6 + 3

Difference between the two sums

9 – 9 = 0

Difference is a equal to zero.

So, 3663 is divisible by 11.

b. **84927**

Sum of the digits in the

Sum of the digits in the even

odd places. places

8 + 9 + 7 = 24 4 + 2 = 6

Difference between the two sums.

24 – 6 = 18 18 is not divisible by 11.

So, 84927 is not divisible by 11.

c. **2345678**

Sum of the digits in the odd places. Sum of the digits in the even places

2 + 4 + 6 + 8 = 20 3 + 5 + 7 = 15

Difference between the two sums.

20 – 15 = 5 5 is not divisible by 11.

So, 2345678 is not divisible by 11.

d. **247269**

Sum of the digits in the odd places. Sum of the digits in the even places

2 + 7 + 6 = 15 4 + 2 + 9 = 15

Difference between the two sums.

15 – 15 = 0 Difference is a equal to zero.

So, 247269 is divisible by 11.

e. **86407**

Sum of the digits in the odd places. Sum of the digits in the even places

8 + 4 + 7 = 19 6 + 0 = 6

Difference between the two sums.

19 – 6 = 13 12 is not divisible by 11.

So, 86407 is not divisible by 11.

f. **3330976**

Sum of the digits in the odd places. Sum of the digits in the even places

3 + 3 + 9 + 6 = 21 3 + 0 + 7 = 10

Difference between the two sums.

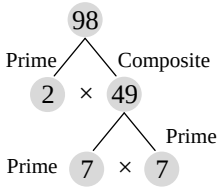
21 – 10 = 11 11 is divisible by 11.

So, 3330976 is divisible by 11.

Exercise 8 (c)

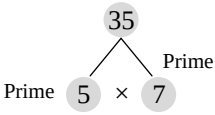
1. Make a factor tree for the following numbers :

Ans. a.



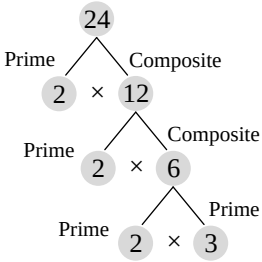
98 = 2 × 7 × 7

b.



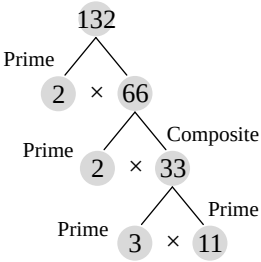
35 = 5 × 7

c.



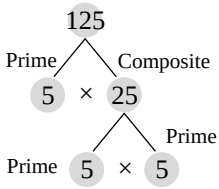
24 = 2 × 2 × 2 × 3

d.



132 = 2 × 2 × 3 × 11

e.



125 = 5 × 5 × 5

2. Write the following numbers as the product of their prime factors. Use division method.

Ans. a.

2	156
2	78
3	39
13	13
	1

So, 156 = 2 × 2 × 3 × 13

b.

2	500
2	250
5	125
5	25
5	5
	1

So, 500 = 2 × 2 × 5 × 5 × 5

c.

2	750
3	375
5	125
5	25
5	5
	1

So, 750 = 2 × 3 × 5 × 5 × 5

d.

2	864
2	432
2	216
2	108
2	54
3	27
3	9
3	3
	1

So, 864 = 2 × 2 × 2 × 2 × 2 × 3 × 3 × 3

e.

2	242
11	121
11	11
	1

So, 242 = 2 × 11 × 11

Exercise 8 (d)

1. Find the HCF by prime factorization method :

Ans. a.

3	15
5	5
	1

2	30
3	15
5	5
	1

Factors of 15 = 3 × 5

Factors of 30 = 2 × 3 × 5

Common factors = 3 × 5

So, HCF = 3 × 5 = 15

b.

2	72
2	36
2	18
3	9
3	3
	1

2	84
2	42
3	21
7	7
	1

Factors of 72
= 2 × 2 × 2 × 3 × 3

Factors of 84
= 2 × 2 × 3 × 7

Common factors
= 2 × 2 × 3

So, HCF = 2 × 2 × 3 = 12

c.

2	28
2	14
7	7
	1

5	35
7	7
	1

d.

3	99
3	33
11	11
	1

3	33
11	11
	1

Factors of 28 = 2 × 2 × 7
Factors of 35 = 5 × 7
Common factors = 7
So, HCF = 7

Factors of 99 = 3 × 3 × 11
Factors of 33 = 3 × 11
Common factors = 3 × 11
So, HCF = 3 × 11 = 33

e.

2	24
2	12
2	6
3	3
	1

2	32
2	16
2	8
2	4
2	2
	1

2	56
2	28
2	14
7	7
	1

Factors of 24 = 2 × 2 × 2 × 3
Factors of 32 = 2 × 2 × 2 × 2 × 2
Factors of 56 = 2 × 2 × 2 × 7
Common factors = 2 × 2 × 2
So, HCF = 2 × 2 × 2 = 8

f.

2	20
2	10
5	5
	1

2	50
5	25
5	5
	1

2	90
3	45
3	15
5	5
	1

Factors of 20 = 2 × 2 × 5
Factors of 50 = 2 × 5 × 5
Factors of 90 = 2 × 3 × 3 × 5
Common factors = 2 × 5
So, HCF = 2 × 5 = 10

g.

2	80
2	40
3	20
5	10
	5
	1

2	120
2	60
2	30
3	125
5	5
	1

2	200
2	100
2	50
5	25
5	5
	1

Factors of 80 = 2 × 2 × 2 × 2 × 5
Factors of 120 = 2 × 2 × 2 × 3 × 5
Factors of 200 = 2 × 2 × 2 × 5 × 5

Common factors = $2 \times 2 \times 2 \times 5$
So, HCF = $2 \times 2 \times 2 \times 5 = 40$

h.

3	45
3	45
5	5
	1

5	65
13	13
	1

3	75
5	25
5	5
	1

Factors of 45 = $3 \times 3 \times 5$
Factors of 65 = 5×13
Factors of 125 = $5 \times 5 \times 5$
Common factors = $3 \times 5 \times 5$
So, HCF = 5

2. Find the HCF using the long division method :

Ans. a.

```
10) 16 (1
   −10
     6) 10 (1
       − 6
         4) 6 (1
           − 4
             2) 4 (2
               − 4
                 x
```

So, HCF = 2

b.

```
27) 30 (1
   −27
     3) 27 (9
       −27
        x
```

So, HCF = 3

c.

```
28) 56 (2
   −56
    x
```

So, HCF = 28

d.

```
15) 45 (3
   −45
    x
```

So, HCF = 15

e.

```
18) 20 (1
   −18
     2) 18 (9
       −18
        x
```

So, HCF = 2

f. We first find the HCF of 25 and 36.

```
25) 36 (1
   −25
    11) 25 (2
       −22
         3) 11 (3
            − 9
              2) 3 (1
                 − 2
                   1) 2 (2
                     − 2
                       x
```

So, HCF of 25 and 36 is 1.

Now, we find the HCF of 1 and 80.

```
1) 80 (80
   −8
    0
    0
    x
```

\ HCF of 1 and 80 is 1.
Hence, the required HCF of 25, 36 and 80 is 1.

g. We first find the HCF of 30 and 75.

```
30) 75 (2
   −60
    15) 30 (2
       −30
        x
```

Now, we find the HCF of 15 and 15.

```
15) 15 (1
   −15
    x
```

\ HCF of 15 and 15 is 15.
Hence, the required HCF of 30, 75 and 15 is 15.

So, HCF of 30 and 75 is 15.

h. We first find the HCF of 60 and 100.

```
60)100(1
   − 60
    40) 60 (1
       −40
        20) 40 (2
           −40
            x
```

So, HCF of 60 and 100 is 20.

Now, we find the HCF of 20 and 125.

```
20)125(6
   −120
     5) 20 (4
       −20
        x
```

\ HCF of 20 and 125 is 5.
Hence, the required HCF of 60, 100 and 125 is 5.

HOTS

Ans. • **12, 18, 21 and 30**

LCM = 3 × 2 × 2 × 3 × 5 × 7

= 1260

So, the no. which when doubled will be exactly divisible by 12, 18, 21 and 30 is 1260 ÷ 2 = 630

3	12, 18, 21, 30
2	4, 6, 7, 10
2	2, 3, 7, 5
3	1, 3, 7, 5
5	1, 1, 7, 5
7	1, 1, 7, 1
	1, 1, 1, 1

• **15, 25, 40 and 75**

LCM = 2 × 2 × 2 × 3 × 5 × 5

= 600

Greatest 4 digit no. = 9999

So, the required no. is 9999 – 399 = 9600

15) 9999 (16
–600
3999
–3600
399

2	15, 25, 40, 75
2	15, 25, 20, 75
2	15, 25, 10, 75
3	15, 25, 5, 75
5	5, 25, 5, 25
5	1, 5, 1, 5
	1, 1, 1, 1

Exercise 8 (e)

1. Find the LCM using the prime factorization method ;

Ans. a.

2	42
3	21
7	7
	1

2	70
5	35
7	7
	1

Factors of 42 = 2 × 3 × 7

Factors of 70 = 2 × 5 × 7

So, LCM = 2 × 7 × 3 × 5

= 210

b.

2	18
3	9
3	3
	1

3	27
3	9
3	3
	1

Factors of 18 = 2 × 3 × 3

Factors of 27 = 3 × 3 × 3

So, LCM = 3 × 3 × 2 × 3

= 54

c.

2	12
2	8
3	3
	1

3	15
5	5
	1

Factors of 12 = 2 × 2 × 3

Factors of 15 = 3 × 5

So, LCM = 3 × 2 × 2 × 5

= 60

d.

2	40
2	20
2	10
5	5
	1

2	32
2	16
2	8
2	4
2	2
	1

Factors of 40 = $2 \times 2 \times 2 \times 5$
Factors of 32 = $2 \times 2 \times 2 \times 2 \times 2$
So, LCM = $2 \times 2 \times 2 \times 5 \times 2 \times 2$
= 160

e.

2	24
2	12
2	6
3	3
	1

2	36
2	18
3	9
3	3
	1

3	45
3	15
5	5
	1

Factors of 24 = $2 \times 2 \times 2 \times 3$
Factors of 36 = $2 \times 2 \times 3 \times 3$
Factors of 45 = $3 \times 3 \times 5$
So, LCM = $2 \times 2 \times 3 \times 3 \times 2 \times 5$ = 360

f.

2	12
2	6
3	3
	1

3	15
5	5
	1

2	40
2	20
2	10
5	5
	1

Factors of 12 = $2 \times 2 \times 3$ Factors of 15 = 3×5
Factors of 40 = $2 \times 2 \times 2 \times 5$
So, LCM = $2 \times 2 \times 3 \times 5 \times 2$ = 60

g.

3	15
5	5
	1

5	25
5	5
	1

2	30
3	15
5	5
	1

Factors of 15 = 3×5 Factors of 25 = 5×5
Factors of 30 = $2 \times 3 \times 5$
So, LCM = $3 \times 5 \times 5 \times 2$
= 150

h.

2	20
2	10
5	5
	1

2	30
3	15
5	5
	1

2	50
5	25
5	5
	1

Factors of 20 = 2 × 2 × 5 Factors of 30 = 2 × 3 × 5
Factors of 50 = 2 × 5 × 5
So, LCM = 2 × 5 × 2 × 3 × 5 = 300

i.

5	35
7	7
	1

2	40
2	20
2	10
5	5
	1

2	60
2	30
3	15
5	5

Factors of 35 = 5 × 7 Factors of 30 = 2 × 3 × 5
Factors of 40 = 2 × 2 × 2 × 5
Factors of 60 = 2 × 2 × 3 × 5
Som LCM = 2 × 2 × 2 × 3 × 5 × 7 = 840

2. Find the LCM by the short division method :

Ans. a. **15, 45**

3	15, 45
3	5, 15
5	5, 5
	1, 1

So, LCM of 15 and 45
= 3 × 3 × 5
= 45

b. **72, 32**

2	72, 32
2	36, 16
2	18, 8
2	9, 4
2	9, 2
3	9, 1
3	3, 1
	1, 1

So, LCM of 72 and 32
= 2 × 2 × 2 × 2 × 2 × 3 × 3 = 288

c. **12, 20**

2	12, 20
2	6, 10
3	3, 5
5	1, 5
	1, 1

So, LCM of 12 and 20
= 2 × 2 × 3 × 5
= 60

d. **30, 55**

2	30, 55
3	15, 55
5	5, 55
11	1, 11
	1, 1

So, LCM of
30 and 55
= 2 × 3 × 5 × 11
= 330

e. **14, 16, 8**

2	14, 16, 8
2	7, 8, 4
2	7, 4, 2
2	7, 2, 1
7	7, 1, 1
	1, 1, 1

So, LCM of
14, 16 and 8
= 2 × 2 × 2 × 2 × 7
= 112

f. **10, 15, 25**

2	10, 15, 25
3	5, 15, 25
5	5, 5, 25
5	1, 1, 5
	1, 1, 1

So, LCM of
10, 15 and 25
= 2 × 3 × 5 × 5
= 150

g. **21, 14, 35**

2	21, 14, 35
3	21, 7, 35
5	7, 7, 35
7	7, 7, 7
	1, 1, 1

So, LCM of
21, 14 and 35
= 2 × 3 × 5 × 7
= 210

h. **16, 32, 40**

2	16, 32, 40
2	8, 16, 20
2	4, 8, 10
2	2, 4, 5
2	1, 2, 5
5	1, 1, 5
	1, 1, 1

So, LCM of
16, 32 and 40
= 2 × 2 × 2 × 2 × 2 × 5
= 160

i. **12, 60, 120**

2	12, 60, 120
2	3, 30, 60
2	3, 15, 30
3	1, 5, 5
5	1, 1, 1

So, LCM of
12, 60 and 120
= 2 × 2 × 2 × 3 × 5
= 120

3. Solve :

Ans. a. One no. = 25
Other no. = 65
HCF = ? LCM = 325
We know that
HCF × LCM = One no. × Other no.
HCF × 325 = 25 × 65

$$\text{HCF} = \frac{25 \times 65}{325}$$

HCF = 5

b. LCM = 156

Because no. are co-prime so, their

HCF = 1 One no. = 13

Other no. = ?

We know that

LCM × HCF = One no. × Other no.

156 × 1 = 13 × Other no.

Other no. = $\frac{156}{13}$

Other no. = **12**

c. Product of two no. = 3072

LCM = 192, HCF = ?

We know that

LCM × HCF = product of two no.

192 × HCF = 3072

HCF = 3072 ÷ 192

HCF = **16**

Exercise 8 (f)

Solve the following :

Ans. 1. **182, 162**

To find the capacity of largest container that can to used to completely fill the containers we need to find HCF of 180 L and 16 L

So, capacity of largest container is 18 L.

```
162)180(1
   –162
     18)162(9
       –162
          x
```

2. **249, 309**

249 – 9 = 240, 309 – 9 = 300

Now, we have to get HCF of 240 and 300

So, HCF = 60

So, 60 is the largest no. that divides 249 and 309 leaving remainder 9.

```
240)300(1
   –240
     60)240(4
       –240
          x
```

3. **12, 18, 20**

We need to get LCM of 12, 18, 20 to find the time duration.

So, LCM = 2 × 2 × 3 × 3 × 5 = 180

2	12, 18, 20
2	6, 9, 10
3	3, 9, 5
3	1, 3, 5
5	1, 1, 5
	1, 1, 1

So, they well tall together after 180 min.
or 3 hours.

4. **350, 450**
So, Maximum no. of children in each group = 50

```
350)450(1
   –350
    100)350(3
       –300
         50)100(2
           –100
             x
```

5. **210, 252, 294**
So, The biggest possible no. of students = 42

```
210)252(1
   –210
    42)210(5
      –210
        x
```

```
42)294(7
  –294
    x
```

MCQs

Choose the correct option.

Ans. 1. a 2. b 3. c 4. d 5. b

Fund with Maths

Ask each student to follow a path of numbers divisible by 2, 3 and 5 respectively, by colouring the numbers, to take the boy to the bus. The path may go up, down or across.

Ans.

44	16	49	8	10	70	11	47
24	60	21	55	68	41	71	94
44	72	49	51	37	120	8	91
28	27	45	91	150	99	126	77
63	47	36	75	180	23	200	61
88	10	8	78	17	31	6	36
45	25	12	21	40	64	54	135
59	61	19	37	99	79	39	22

Chapter

9 Measurement

Exercise 9 (a)

1. Convert the following metric measures :

Ans. a. **6 dam to cm**

= 6 dam

= 6 × 1000 cm

= 6000 cm

b. **17 km to dm**

= 17 km

= 17 × 10000 dm

= 170000 dm

c. **8 g to mg**

= 8 g

= 8 × 1000 mg = 7000 mg

d. **75 hg to g**

= 75 hg

= 75 × 100 g = 7500 g

e. **56 L to cL**

= 56 L

= 56 × 100 cL = 5600 cL

f. **4 daL to dL**

= 4 daL

= 4 × 100 dL = 400 dL

g. **4 dm to hm**

= 4 dm

$= \frac{4}{1000}$ hm = 0.004 hm

h. **2500 cm to m**

= 2500 cm

$= \frac{2500}{100}$ m = 25 m

i. **750 cg to g**

= 750 cg

$= \frac{750}{100}$ g = 7.50 g

j. **18 dg to kg**

= 18 dg

$= \frac{18}{10000}$ kg = 0.0018 kg

k. **7800 mL to L**

= 7800 mL

$= \frac{7800}{1000}$ L = 7.800 L

l. **99 dL to kL**

= 99 dL

$= \frac{99}{10000}$ kL = 0.0099 kL

m. **15 km 8 m to m**

= 15 km 8 m

= 15 × 1000 m + 8 m

= 15000 m + 8 m

= 15008 m

n. **11 dam 25 cm to cm**

= 11 dam 25 cm

= 11 × 1000 cm + 25 cm

= 11000 cm + 25 cm

= 11025 cm

o. **3 kg 106 g to dg**

= 3 kg 106 g

p. **19 kg 4 dag to dag**

= 19 kg 4 dag

= 3 × 10000 dg + 106 × 10 dg
= 30000 dg + 1060 dg
= 31060 dg

= 19 × 100 dag + 4 dag
= (1900 + 4) dag
= 1904 dag

q. **52 hL 45 dL to dL**
= 52 hl 45 dl
= 52 × 1000 dl + 45 dl
= 52000 dl + 45 dl
= 52045 dl

r. **26 L 375 mL to mL**
= 26 L 375 mL
= (26 × 1000 + 375) mL
= (26000 + 375) mL
= 26375 mL

2. Convert and express your answer in decimals :

Ans. a. **38 dam 46 cm to dam**
= 38 dam + 46 cm
= 38 dam + $\frac{46}{1000}$ dam
= 38 + 0.046 dam
= 38.046 dam

b. **8 hm 350 dm to hm**
= 8 hm 350 dm
= 8 hm $\frac{350}{1000}$ hm
= 8 hm + 0.350 hm
= 8.350 hm

c. **17 dg 6 mg to dg**
= 17 dg 6 mg
= 17 dg + $\frac{6}{10}$ dg
= 17 dg + 0.6 dg
= 17.6 dg

d. **23 dag 96 cg to dag**
= 23 dag 96 cg
= 23 dag + $\frac{96}{1000}$ dag
= 23 dag + 0.496 dag
= 23.096 dag

e. **30 dL 5 mL to dL**
= 30 dL 5 mL
= 30 dL + $\frac{5}{100}$ dL
= 30 dL + 0.05 dL
= 30.05 dL

f. **16 kL 35 L to L**
= 16kL 35 L
= 16 × 1000 L + 35 L
= 16000 L + 35 L
= 16035 L

Exercise 9 (b)

1. Add :

Ans. a.

m	cm
121	13
97	05
+21	21
239	39

b.

m	cm
219 .	70
85 .	39
+ 2 .	73
307 .	82

c.

km	m
13	583
10	005
+15	026
38	614

d.

km	m
4	. 000
8	. 099
+ 14	. 586
26	. 685

e.

cm	mm
56	. 7
63	. 2
+ 56	. 7
176	. 6

f.

m	cm
25	. 70
13	. 80
+ 14	. 02
53	. 52

2. Subtract :

Ans. a.

86.85	m
– 52.39	m
34.46	m

b.

10.000	km
– 3.965	km
6.035	km

c.

29.7	cm
– 21.9	cm
7.8	cm

d.

km	m
11	527
– 9	075
2	452

e.

m	cm
101	19
– 49	32
51	87

f.

cm	mm
19	0
– 15	8
3	2

3. Add the following. Give your answer in kg :

Ans. a.

6315	g
2817	g
+ 178	g
9310	g

b.

kg	g
5	025
	835
+ 12	005
17	865

c.

kg	g
18	706
75	009
+ 13	091
106	806

d.

kg	g
13	325
12	000
+ 14	981
40	306

4. Subtract :

Ans. a.

9.690	kg
– 6.750	kg
2.940	kg

b.

g	mg
18	690
– 12	150
6	540

c.

kg	g
18	500
– 9	750
8	750

d.

kg	g
3	160
–	390
2	770

5. Add :

Ans. a.

L	mL
3	275
8	685
– 14	500
26	460

b.

L	mL
1	450
80	692
+ 3	721
85	863

c.

L	mL
6	498
14	506
+ 7	098
28	102

d.

L	mL
25	050
7	009
+ 9	931
41	990

6. Subtract :

Ans. a.

L	mL
17	000
– 15	396
1	604

b.

L	mL
2	630
–	985
1	645

c.

L	mL
21	000
– 18	215
2	785

d.

L	mL
19	780
– 12	319
7	461

HOTS

Ans. 1 m 62 cm

Exercise 9 (c)

1. Multiply :

Ans. a.

25.98	dm
×3	
77.94	dm

b.

36.9	cm
×5	
184.5	cm

c.

1.683	km
×9	
15.147	km

d.

cm	mm
13	8
×	5
69	0

e.

kg	g
5	120
	×5
25	600

f.

15.060	kg
×9	
135.540	kg

g.

20.806	kg
×17	
145.642	
+208.06×	
353.702	

h.

kg	hg	dag	g
4	2	6	5
		×	7
2 9	8	5	5

i.

323	mL
×9	
2907	mL

j.

L	mL
21	8
	× 13
273	104

k.

1823	mL
×11	
1823	
1823×	
20053	

l.

7.639	L
33	
22.917	
22917×	
252.087	L

2. Divide :

Ans. a.

4) 39.6 (9.9
– 36
36
– 36
x

b.

8) 0.01864 (0.00233
– 16
26
– 24
24
– 24
x

c.

16) 18.6 (1.1625
– 16
26
– 16
100
– 96
40
– 32
80
– 80
x

d.
```
5) 17.8 (3.56
 – 15
    28
  – 25
    30
  – 30
     x
```

e.
```
5) 16.745 (3.349
  – 15
     17
   – 15
     24
   – 20
     45
   – 45
      x
```

f.
```
8) 56080 (7010
  – 56
     08
   – 8
      0
    – 0
      x
```

g.
```
9) 25.209 (2.801
 – 18
    72
  – 72
     0
   – 0
     9
   – 9
     x
```

h.
```
12) 13.488 (1.124
  – 12
     14
   – 12
     28
   – 24
     48
   – 48
      x
```

i.
```
6) 17.388 (2.898
 – 12
    53
  – 48
    58
  – 54
    48
  – 48
     x
```

j.
```
11) 81.312 (7.392
  – 77
     43
   – 33
    101
   – 99
     22
   – 22
      x
```

k.
```
9) 16.398 (1.822
 – 9
    73
  – 72
    19
  – 18
    18
  – 18
     x
```

l.
```
11) 97.042 (8.822
  – 88
    90
  – 88
    24
  – 22
    22
  – 22
     x
```

Exercise 9 (d)

Ans. 1. Saurabh's height = 158.9 cm
Rohit's height = 118.5 cm
Since 158.9 > 118.5
So, Saurabh is taller than Rohit by 40.4 cm.

```
  158.9 cm
– 118.5 cm
   40.4 cm
```

2. Weight of potatoes = 4 kg 200 g
Weight of brinjals = 2 kg 800 g
Weight of tomatoes = + 5 kg 750 g
Total Vegetables = **12 kg 750 g**

So, 12 kg 750 g vegetables bought by Maya.

3. Cloth required for one shirt = 2.25 m
So, cloth required for 17 shirts = 2.25 m × 17
= 38.25 m

So, 38.25 m cloth required for 17 shirts.

4. Petrol stored in 32 tanks = 4242.56 L
So, petrol stored in 1 tank = 4242.56 L ÷ 32
= 132.58 L

```
32) 4242.56 (132.58
  – 32
    104
   – 96
     82
   – 64
     185
   – 160
      256
    – 256
        x
```

So, 132.58 L oil is stored in each tank.

5. Amount of tea packed in 45 packet = 49 kg
So, amount of 1 packet = 49 kg 950 g ÷ 45
= 49 kg 950 g
or = (49950 ÷ 45) g
= 1110 g
= 1.110 kg
or = 1 kg 110 g

```
45) 49950 (1110
  – 45
    49
  – 45
     45
   – 45
      0
    – 0
      x
```

6. Weight of apples = 2 kg 350 g
Weight of papayas = 4 kg 825 g
Weight of strawberries = + 3 kg 475 g
Total weight of fruits = **10 kg 650 g**

So, Dhruv bought 10 kg 650 g fruits.

7. A person travels in 4 days by car = 1582.4 km
So, he travels in 1 day by car = (1582.4 ÷ 4) km
= 395.6 km

So, he travelled 395.6 km in 1 day.

```
4)1582.4(395.6
 – 12
    38
  – 36
     22
   – 20
      24
    – 24
       x
```

8. Cloth required for curtains = 4.75 m
Cloth required for cushion cover = + 5.85 m
= **10.60 m**

So, 10.60 m cloth is required.

9. Weight of 25 toffees = 275 g
So, weight of 1 toffee = (275 ÷ 25) g
So, weight of 80 toffees = (275 ÷ 25) × 80 g
= 880 g

So, Weight of 80 toffees 880 g.

10. Length of one saree = 5.672 m
So, length of 50 sarees = 5.672 × 50 m
= 283.60 m

```
 5.672 m
  ×50
283.60 m
```

So, length of 50 sarees 283.60 m.

11. Milk required for sweets = 17.950 L
Milk required for curd = 18.695 L
Milk required for tea = + 5.165 L
Total milk required = **41.810 L**

So, Shop required 41.810 L of milk.

MCQs

Choose the correct option.

Ans. 1. a 2. c 3. c 4. b

The units of metric measures are used as standard units all over the globe. But there are other units also, which are used in most parts of the world in everyday life. Look at the conversion chart given below and answer the questions that follow :

Conversion Chart					
1 mile	=	1.61 km	1 km	=	0.62 miles
1 yard	=	0.914 m	1 m	=	1.09 yards
1 inch	=	2.54 cm	1 litre	=	0.264 gallon
1 gallon	=	3.79 L	1 kg	=	2.2 pounds

Ans. 1. The length of a cricket pitch is 22 yards. The equivalent length in metres is **20.108**.

2. If Ajay ordered a 4— pound cake for his birthday, what is the equivalent mass in kilograms? **2.045**.
3. The water tax bill shows the consumption of 8000 gallons of water. The equivalent consumption in litres is **30320**.
4. If a wheat bag weighs 80 kg, the equivalent weight in pounds is **176**.
5. The distance between Delhi and Mussoorie is 275 km. The equivalent distance in miles is **170.5**.
6. Mrs Sen bought 500 g of cedar cheese for pizza. The equivalent weight in ounces is **17.637**.
7. Mr. Singh is 6 feet 2 inches tall. What is his height in metres and centimetres? **1.88** m and **188** cm

Chapter

10 Percentage

HOTS

Ans. Money paid for bill = ` 385
Amount of bill = – ` 350
Balance left as tip = ` **35**

Required percent $= \frac{35 \times 100}{350}$

$= 10\%$

Exercise 10 (a)

1. What percentage of the square is shaded?

Ans. a. 5% b. 27% c. 75%

2. Write the following fractions as percentage :

Ans. a. $\mathbf{\frac{1}{2}}$ b. $\mathbf{\frac{3}{5}}$ c. $\mathbf{\frac{4}{10}}$ d. $\mathbf{\frac{1}{4}}$

$= \frac{1}{2} \times 100\%$ $= \frac{3}{5} \times 100\%$ $= \frac{4}{10} \times 100\%$ $= \frac{1}{4} \times 100\%$

$= 50\%$ $= 60\%$ $= 40\%$ $= 25\%$

3. Write the following percentage as fraction :

Ans. a. **35%** b. **54%** c. **60%** d. **85%**

$= \frac{35}{100} = \frac{7}{20}$ $= \frac{54}{100} = \frac{27}{50}$ $= \frac{60}{100} = \frac{3}{5}$ $= \frac{85}{100} = \frac{17}{20}$

4. Write the following decimal fraction as percentage :

Ans. a. **0.32**

$= \frac{32}{100} = 32\%$

b. **0.43**

$= \frac{43}{100} = 43\%$

c. **0.058**

$= \frac{58}{1000} = \frac{58}{10} \times \frac{1}{100}$

$= \frac{5.8}{1000} = 5.8\%$

d. **0.85**

$= \frac{86}{100} = 85\%$

5. Write percentage as decimal fraction :

Ans. a. **83%**

$= \frac{83}{100} = 0.83$

b. **35%**

$= \frac{35}{100} = 0.35$

c. **26%**

$= \frac{26}{100} = 0.26$

d. **62%**

$= \frac{62}{100} = 0.62$

Exercise 10 (b)

1. Find the value of the given numbers :

Ans. a. **10% of 62**

$= 62 \times \frac{10}{100} = 6.2$

b. **22% of 145**

$= 145 \times \frac{22}{100} = 31.90$

c. **68% of 96**

$= 96 \times \frac{68}{100} = \frac{6528}{100} = 65.28$

d. **34% of 138**

$= 138 \times \frac{34}{100} = \frac{138 \times 34}{100} = \frac{4692}{100} = 46.92$

e. **82% of 346**

$= 346 \times \frac{82}{100} = \frac{28372}{100} = 283.72$

f. **73% of 204**

$= 204 \times \frac{73}{100} = \frac{14892}{100} = 248.92$

2. Find :

Ans. a. **Let x% of 80 is 25**

Then $80 \times x\% = 25$

$\frac{80 \times x}{100} = 25$

or $x = \frac{25 \times 100}{80}$

$x = 31.25$

or $x = 31.25$ %

b. **Let x% of `300 is `30.**

Then $30 \times x\% = 30$

$\frac{300 \times x}{100} = 30$

or $x = \frac{30 \times 100}{300}$ $x = 10$

or $x = 10$ %

c. **Let x% of 1200 g is 264 g**

Then $1200 \times x\% = 264$

$\frac{1200 \times x}{100} = 264$

or $x = \frac{264 \times 100}{1200}$ $x = 22$

or $x = 22\ \%$

d. **Let x% of 2000 is `250**

Then $2000 \times x\ \% = 250$

$\frac{2000 \times x}{100} = 250$

or $x = \frac{250 \times 100}{2000}$ $x = 12.5$

or $x = 12.5\ \%$

e. **Let x% of 150 kg = 60 kg**

Then $150 \times x\ \% = 60$

$\frac{150 \times x}{100} = 60$

or $x = \frac{60 \times 100}{150}$ $x = 40$

or $x = 40\ \%$

f. **Let x% of `2700 is `900**

Then $2700 \times x\ \% = 900$

$\frac{2700 \times x}{100} = 900$

or $x = \frac{900 \times 100}{2700}$

$x = \frac{100}{3}$

or $x = 33.3\ \%$

3. Solve :

Ans. a. Total mark = 750

Kavya scored = 89 %

So, Marks of Kavya = 750 and 89%

$= \frac{750 \times 89}{100} = 667.5$

So, Kavya got 667.5 marks out of 750.

b. Total students = 40
Present students = 35%
So. no. of present students = 40 × 35%
$= \frac{40 \times 35}{100} = 14$ students

So, no. of absentes = 40 – 14 = 26 students.

c. Vidhya earns per month = ` 24000
She saves = 28 %
= 28 % of 24000
$= \frac{24000 \times 28}{100} =$ ` 6720

So, she spent per month = ` 24000 – ` 6720
= ` 17280

So, she spent ` 17280 per month.

d. Population of a village = 2400
Children = 12 %
No. of children = 2400 × 12 %
$= \frac{2400 \times 12}{100} = 288$

So, no. of adults = 2400 – 288 = 2112

e. Weight of Chinki = 63 kg
Rinki's weight is more = 14 % of Chinki
= 63 × 14 %
$= \frac{63 \times 14}{100} = 8.82$ kg

So, Rinki's weight = 63 kg + 8.82 kg
= 71.82 kg

MCQs

Choose the correct option.

Ans. 1. b 2. d 3. b 4. b

Fun with Maths

The table given below shoes the marks obtained by Jhanvi in her annual examination. She wants to know her aggregate. Help her to find her aggregate in annual exam.

Annual Exam Report

Subject	Marks obtained	Total Marks	Percentage
Mathematics	76	100	76%
English	83	100	83%
Hindi	69	100	61%
Science	90	100	90%
S.St.	87	100	87%

Ans. 81%

Chapter

11 Money

Ashok Cloth House

On 15 June 2015, Ratan Cloth House, Delhi, sold the following items to Mrs. Nilam. Prepare a bill for the purchase. Mrs. Nilam had `10,000 with her. How much money is left with her now.

Ans.

S.No.	Item	Quantity	Rate per piece	Total cost
1.	Silk saree	2	` 1150	` 2300
2.	Suit	2	` 550	` 1100
3.	Night suit	3	` 250	` 750
4.	Woolen shawls	2	` 1720	` 3440
			Total =	` 7590

She had left ` 10000 – ` 7590 = ` 2410 with her.

Mental Maths

Fill in the blanks :

Ans.
1. 3 pencils cost of `12. `**4** is the cost of 1 pencil.
2. If the cost of 5 L of oil is `125, the cost of 2 L oil will be `**50**.
3. If `36 is paid for 4 oranges, `72 will be paid for **8** oranges.
4. If 50 kg rice costs `1000, then for `500 we can buy **25** kg rice.
5. 8 pastries cost `40. **4** such pastries will cost `20.

Exercise 11 (a)

1. Fill in the blanks :

Ans. a. 7 pens cost `49. So the cost of 1 pen will be `**7**.

b. A dozen banana cost `36, so 1 banana costs `**3**.

c. If 4 notebooks cost `60, the cost of a notebook is `**15**.

d. The cost of 12 footballs is `1080. 1 football will be cost `**90**.

e. 5 L of oil cost `150. The cost of 1 L of oil is `**30**.

2. Solve these word problems :

Ans. a. Cost of 10 kg of sugar = ` 185

\ Cost of 1 kg of sugar = ` $\frac{185}{10}$

\ Cost of 8 kg of sugar = ` $\frac{185 \times 8}{10}$

= `148

So, Cost of 8 kg of sugar will be `148.

b. School fee for a term of 4 months = `1260

School fee for a month = `$\frac{1260}{4}$

School fee for annual (12 months) = `$\frac{1260 \times 12}{4}$

= `3780

So, annual fee of school is `3780.

c. Cost of 7 ties = `910

Cost of 1 ties = `$\frac{910}{7}$

Cost of 8 ties = `$\frac{910 \times 8}{7}$ = `1040

So, 8 ties cost `1040.

d. Cost of 11 washing machine = ` 66000

\ Cost of 1 washing machine = ` $\frac{66000}{11}$

\ Cost of 6 washing machine = ` $\frac{66000 \times 6}{11}$

= ` 36000

So, the cost of 6 washing machine is ` 36000.

Exercise 11 (b)

1. Find the profit or loss.

Ans.

S.No.	C.P.	S.P.	Profi	Loss
a.	` 5,000	` 6,000	` 1000	
b.	` 12,000	` 10,000		` 2000
c.	` 1,800	` 2,400	` 600	
d.	` 5,400	` 7,200	` 1800	
e.	` 9,100	` 8,000		` 1100

2. Fill in the blanks.

Ans.

S.No.	C.P.	S.P.	P	L
a.	` 2,900	` 2600		` 300
b.	` 2800	` 2,900	` 100	
c.	` 1650	` 1,590		` 60
d.	` 6,100	` 6400	` 300	
e.	` 5,400	` 5800	` 400	

3. Solve these story problems.

Ans. a. C.P. of mobile = ` 2675

S.P. of mobile = ` 3629

Since SP > CP

So, he made a profit.

Profit = S.P. – C.P.

Profit = ` 3629 – ` 2675 = ` 954

b. C.P. of pen = ` 17.50

S.P. of pen = ` 22.00

Since SP > CP

So, he made a profit.

Profit = S.P. – C.P.

= ` 22.00 – ` 17.50 = ` 4.50

c. C.P. of fan = ` 725.00

Loss = ` 50.00

So, S.P. of fan = C.P. – Loss

= ` 725 – ` 50 = ` 675

d. C.P. of book = ` 360

Profit = ` 85

So, C.P. of book = SP – Profit

= ` 360 – ` 85 = ` 275

e. C.P. of radio = ` 740

Loss = ` 95

So, S.P. of radio = CP – loss

= ` 740 – ` 95 = ` 645

f. C.P. of cycle = ` 4695

Profit = ` 1125

So, S.P. of cycle = C.P. + Profit

= ` 4695 + ` 1125 = ` 5820

Exercise 12 (c)

1. Fill in the blanks :

Ans. a. P = ` 1800

R = 5 %

T = 2 years

S.I. = $\frac{P \times R \times T}{100}$

= ` $\frac{1800 \times 5 \times 2}{100}$

= ` 180

A = P + S.I.

= ` 1800 + ` 180

= ` 1980

b. P = ` 560

R = 8 %

T = 10 years

S.I. = $\frac{P \times R \times T}{100}$

= ` $\frac{560 \times 8 \times 10}{100}$

= ` 448

A = P + S.I.

= ` 560 + ` 448

= ` 1008

c. P = ` 2500

R = 10 %

T = 5 years

S.I. = $\frac{P \times R \times T}{100}$

= ` $\frac{2500 \times 10 \times 5}{100}$

= ` 1250

d. P = ` 6500

R = 12 %

T = 3 years

S.I. = $\frac{P \times R \times T}{100}$

= ` $\frac{6500 \times 12 \times 3}{100}$

= ` 2340

A = P + S.I.
= ` 2500 + ` 1250
= ` 3750

A = P + S.I.
= ` 6500 + ` 2340
= ` 8840

e. P = ` 15000
R = 11 %
T = 2 years
S.I. = $\frac{P \times R \times T}{100}$
= ` $\frac{15000 \times 11 \times 2}{100}$ = ` 3300
A = P + S.I. = ` 15000 + ` 3300
= ` 18300

2. Find the interest and the amount for 1 year when the principal and the rate of interest are given to you :

Ans. a. P = ` 2000
R = 5 %
T = 1 year
S.I. = $\frac{P \times R \times T}{100}$
= ` $\frac{2000 \times 5 \times 1}{100}$
= ` 100
A = P + S.I.
= ` 2000 + ` 100
= ` 2100

b. P = ` 1500
R = 7 %
T = 1 year
S.I. = $\frac{P \times R \times T}{100}$
= ` $\frac{1500 \times 7 \times 1}{100}$
= ` 105
A = P + S.I.
= ` 1500 + ` 105
= ` 1605

c. P = ` 2800
R = 10 %
T = 1 year
S.I. = $\frac{P \times R \times T}{100}$
= ` $\frac{2800 \times 10 \times 1}{100}$
= ` 280

d. P = ` 10000
R = 3 %
T = 1 year
S.I. = $\frac{P \times R \times T}{100}$
= ` $\frac{10000 \times 3 \times 1}{100}$
= ` 300

A = P + S.I.
= ` 2800 + ` 280
= ` 3080

e. P = ` 14000
R = 8 %
T = 1 year
S.I. = $\frac{P \times R \times T}{100}$
= ` $\frac{14000 \times 8 \times 1}{100}$
= ` 1120
A = P + S.I.
= ` 14000 + ` 1120
= ` 15120

A = P + S.I.
= ` 10000 + ` 300
= ` 10300

f. P = ` 2500
R = 12 %
T = 1 year
S.I. = $\frac{P \times R \times T}{100}$
= ` $\frac{2500 \times 12 \times 1}{100}$
= ` 300
A = P + S.I.
= ` 2500 + ` 300
= ` 2800

3. Find the interest and the amount when :

Ans. a. P = ` 1000
R = 2.5 %
T = 3 years
S.I. = $\frac{P \times R \times T}{100}$
= ` $\frac{1000 \times 2.5 \times 3}{100}$
= ` 75
A = P + S.I.
= ` 1000 + ` 75
= ` 1075

b. P = ` 2500
R = 12 % = %
T = 10 year
S.I. = $\frac{P \times R \times T}{100}$
= ` $\frac{2500 \times 25 \times 10}{2 \times 100}$
= ` 3125
A = P + S.I.
= ` 2500 + ` 3125
= ` 5625

c. P = ` 750
R = 5 %
T = 2 years = years
S.I. = $\frac{P \times R \times T}{100}$
= ` $\frac{750 \times 5 \times 5}{}$

d. P = ` 10000
R = 6 % = %
T = 4 years
S.I. = $\frac{P \times R \times T}{100}$
= ` $\frac{10000 \times 13 \times 4}{}$

100×2

= ` 93.75

A = P + S.I.

= ` 750 + ` 93.75

= ` 843.75

e. P = ` 15000

R = 5 %

T = 7 years = years

S.I. = $\frac{P \times R \times T}{100}$

= ` $\frac{15000 \times 5 \times 15}{100 \times 2}$

= ` 5625

A = P + S.I.

= ` 15000+ ` 5625

= ` 20625

100×2

= ` 2600

A = P + S.I.

= ` 10000 + ` 2600

= ` 12600

f. P = ` 5000

R = 10 %

T = 3 years = years

S.I. = $\frac{P \times R \times T}{100}$

= ` $\frac{5000 \times 10 \times 7}{100 \times 2}$

= ` 1750

A = P + S.I.

= ` 5000 + ` 1750

= ` 6750

4. Solve these problems :

Ans. a. P = ` 12000

R = 6 % = % per annum

T = 5 years

S.I. = $\frac{P \times R \times T}{100}$

= ` $\frac{12000 \times 13 \times 5}{100 \times 2}$

= ` 3900

b. P = ` 3500

R = 7 %

T = 3 years

S.I. = $\frac{P \times R \times T}{100}$

= ` $\frac{3500 \times 7 \times 3}{100}$

= ` 735

So, Mauli will get ` 735 as interest after 3 years.

c. P = ` 70000

R = 11 % per annum

T = 6 years

S.I. = $\frac{P \times R \times T}{}$

d. P = ` 4500

R = 12 %

T = 5 years

S.I. = $\frac{P \times R \times T}{}$

$$= \text{` } \frac{70000 \times 11 \times 6}{100}$$

$$= \text{` } 46200$$

So, he will have to pay ` 46200 as interest.

$$= \text{` } \frac{4500 \times 12 \times 5}{100}$$

$$= \text{` } 2700$$

$$A = P + S.I.$$

$$= \text{` } 4500 + \text{` } 2700$$

$$= \text{` } 7200$$

So, he will repay ` 7200 at the end of 5 years.

Fun with Maths

Compare the following. Tick (3) the best deal.

Ans.

1.	20		for ` 275	○	25		for ` 300	✓
2.	3 kg		for ` 30	○	4 kg		for ` 38	✓
3.	12		for ` 60	✓	16		for ` 96	○
4.	9		for ` 202.50	○	12		for ` 264	✓
5.	8		kg for ` 260	✓	5 kg		for ` 163.75	○

Chapter

12 Average

HOTS

Ans. 29 students.

Exercise 12 (a)

1. Find the average of the given sets :

Ans. a. **18, 21, 32, 19, 25**

$$\text{Average} = \frac{18 + 21 + 32 + 19 + 25}{5} = \frac{115}{5} = 23$$

b. **11, 22, 33, 44, 5.5**

$$\text{Average} = \frac{11 + 22 + 33 + 44 + 55}{5} = \frac{16.5}{5} = 3.3$$

c. **5 cm, 10 cm, 15 cm, 20 cm**

Average $= \frac{5 + 10 + 15 + 20}{4} = \frac{50}{4} = 12.5$ cm

d. $\mathbf{\frac{5}{9}, \frac{7}{18}, \frac{8}{27}}$, sum $= \frac{5}{9}, \frac{7}{18}, \frac{8}{27} = \frac{30 + 21 + 16}{54} = \frac{67}{54}$

Average $= \frac{67}{54} \div \frac{3}{1} = \frac{67}{54} \times \frac{1}{3} = \frac{16.5}{5}$

e. $\mathbf{\frac{2}{10}, \frac{3}{10}, \frac{7}{20}, \frac{9}{25}}$

Average $= \frac{0.2 + 0.3 + 0.35 + 0.36}{4} = 1.2¼ = 0.3025$

f. **`230, `360, `190, `220, `100**

Average $= \frac{`230 + 360 + 190 + 220 + 100}{5} = \frac{`1100}{5} = `220$

2. Solve these problems :

Ans. a. Average = 492

No. = 6

Total = Average × No.

= 492 × 6

= 2952

Grand Total = 2952

b. `6000, `4500, `3500, `3000 and `4000

Average sale $= \frac{`6000 + 4500 + 3500 + 3000 + 4000}{5}$

$= \frac{`21000}{5} = `4200$

So, average sale is `4200.

c. Rain in four consecutive days = 2.2 cm, 3.4 cm, 0.6 cm, 1.8 cm

Average rainfall $= \frac{2.5 + 3.4 + 0.6 + 1.8}{4}$ cm

$= \frac{8.0}{4}$ cm $= 2.0$ cm

The average of daily rainfall is 2.0 cm.

d. 7 multiple of 8=8, 16, 24, 32, 40, 48, 56

Average $= \frac{8 + 16 + 24 + 32 + 40 + 48 + 56}{7}$

$$= \frac{224}{7} = 32$$

Yes, average is also a multiple of 8.

e. Marks of 7 students = 12, 18, 9, 11, 7, 14 and 6

Average marks $= \frac{12 + 18 + 9 + 11 + 7 + 14 + 6}{7}$

$$= \frac{77}{7} = 11$$

Average marks of students is 11.

f. Even no.

between 21 to 41 = 22, 24, 26, 28, 30, 32, 34, 36, 38, 40

Average $= \frac{22 + 24 + 26 + 28 + 30 + 32 + 34 + 36 + 38 + 40}{10}$

$$= \frac{310}{10} = 31$$

Thus, average is odd number.

g. Average speed = 46 km / hr

time = 7 hrs

Distance = average speed × time

= 46 × 7

= 322 km

It will cover 322 km in 7 hours.

h. No. of match = 5

average runs = 73

total run scored = average × no. of matches

= 73 × 5

= 365 runs

So, Vineet scored 365 runs altogether.

MCQs

Choose the correct option.

Ans. 1. b 2. a 3. c

Fun with Maths

Ans. Do it yourself.

Chapter

13 Geometry

Mental Maths

Fill in the blanks :

Ans. 1. A line has **no** end points.
2. A **line segment** can be measured.
3. A **Ray** has one end point.
4. **Intersecting** lines meet at a point.
5. The distance between two **paralled** lines remains same throughout.

Exercise 13 (a)

1. Identify the following geometrical figures represented by symbols :

a. ray ST b. line UV c. K point
d. line segment LM

2. Using a scale, draw line segments of the following measurements :

Ans. Do it yourself.

3. Look at the given figure and fill in the blanks.

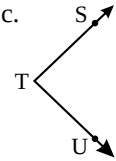
Ans. a. **AB** is parallel to CD.
b. **KL** is perpendicular to AB and CD.
c. AB and CD intersect **KL** and **XY**.
d. AB and XY are **intersecting** lines.

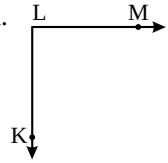
4. State true (T) or false (F) :

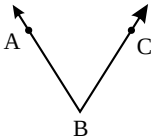
Ans. a. False b. False c. False d. True

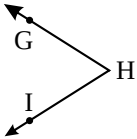
Exercise 13 (b)

1. Which of the following figures represent angles?

c.


d.


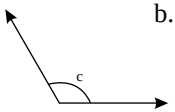
g.


h. 

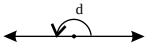
2. From the given figure, list the points which are :

Ans. a. X, Y b. A, B c. S, T

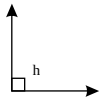
3. Identify the angles of acute, right, obtuse, straight, reflex or complete without measuring them.

Ans. a. 

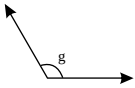
obtuse

b. 

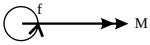
straight

c. 

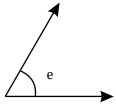
right

d. 

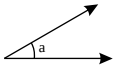
obtuse

e. 

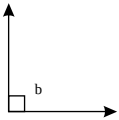
complete

f. 

acute

g. 

acute

h. 

right

4. Measure the following angles using a protractor.

Ans. Do it yourself.

5. Draw the following angles using a protractor. Name the angles correctly :

Ans. Do it yourself.

6. Fill in the blanks :

Ans. a. Angles are measured with the help of a **protractor**.

b. A straight angle always measures **180°**.

c. A right angle measures **90°**.

d. An acute angle is greater than a **0°** angle but less than a **90°** angle.

e. A 150° angle is an **obtuse** angle.

Exercise 14 (c)

1. A circle is given in the adjoining figure. Fill in the blanks by observing the figure.

Ans. a. Name the three radii **OA, OB, OC**.

b. Name the diameter of the circle **AOB**.
c. Name the chord of the circle **XY**.
d. Name the minor arc of the circle $\overset{\frown}{\mathbf{XY}}$.
e. Name the major segment of the circle $\overset{\frown}{\mathbf{XACBY}}$.
f. Name the largest chord **AOB**.

2. From the adjoining figure, write the points which are given :

Ans. a. In the interior of the circle **P, Q, O, T**.
b. In the exterior of the circle **N, R, M**.
c. On the circle **A, X, Y, Z**.

3. Find the radius of the circles with the following diameter :

Ans. a. $d = 7$ cm
$r = \frac{d}{2}$
$= \frac{7}{2}$ cm $= 3.5$ cm

b. $d = 8$ cm
$r = \frac{d}{2}$
$= \frac{8}{2}$ cm $= 4$ cm

c. $d = 7.2$ cm
$r = \frac{d}{2}$
$= \frac{7.2}{2}$ cm $= 3.6$ cm

d. $d = 4.8$ cm
$r = \frac{d}{2}$
$= \frac{4.8}{2}$ cm $= 2.4$ cm

4. Find the diameter of the circles with the following radii :

Ans. a. radius $= 6$ cm
$d = 2 \times r$
$= 2 \times 6$ cm
$= 12$ cm

b. radius $= 3.5$ cm
$d = 2 \times r$
$= 2 \times 3.5$ cm
$= 7.0$ cm

c. radius $= 7.3$ cm
$d = 2 \times r$
$= 2 \times 7.3$ cm
$= 14.6$ cm

d. radius $= 9.5$ cm
$d = 2 \times r$
$= 2 \times 9.5$ cm
$= 19.0$ cm

5. Draw circles with the following radii using a compass :

Ans. Do it yourself.

MCQs

Choose the correct option.

Ans. 1. b 2. c 3. b 4. a

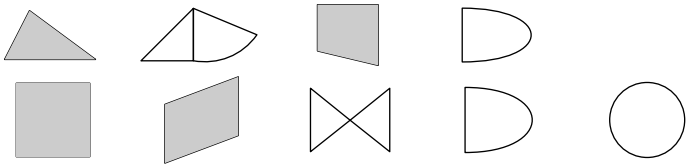
Chapter

14 Polygons

Looking Back

Colour the polygons in the following.

Ans.



HOTS

In the given figure, find :

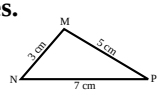
$\angle A + \angle B + \angle C + \angle D + \angle E + \angle F$

Ans. 360°

Exercise 14 (a)

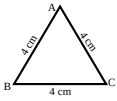
1. Classify the triangles according to the measurement of their sides.

Ans. a.



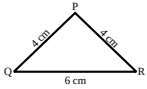
Scalene

b.



equilateral

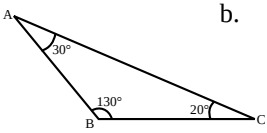
c.



Isosceles

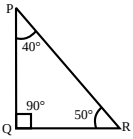
2. Classify the triangles according to their angles.

Ans. a.



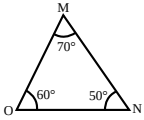
Obtuse-angled triangle

b.



Right-angled triangle

c.



Acute-angled triangle

3. Find the missing angle of each triangle.

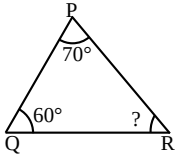
Ans. a. We know that

$\angle P + \angle Q + \angle R = 180°$

$70° + 60° + \angle R = 180°$

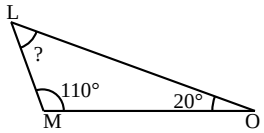
$130° + \angle R = 180°$

$\angle R = 180° - 130°$



$\angle R = 50°$

b. We know that



$\angle L + \angle M + \angle O = 180°$

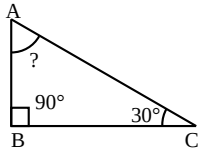
$\angle L + 110° + 20° = 180°$

$\angle L + 130° = 180°$

$\angle L = 180° - 130°$

$\angle L = 50°$

c. We know that



$\angle A + \angle B + \angle C = 180°$

$\angle A + 90° + 30° = 180°$

$\angle A + 120° = 180°$

$\angle A = 180° - 120°$

$\angle A = 60°$

Exercise 14 (b)

1. Fill in the blanks :

Ans. a. A rhombus has all its **sides** equal.

b. Opposite angles of a rhombus are **equal**.

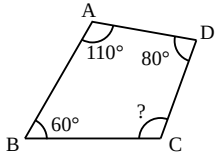
c. Each angle of a rectangle is equal to **90°**.

d. A parallelogram whose all sides and each angle equal to 90° is called a **rectangle**.

e. A trapezium having two sides equal is **Isosceles trapezium**.

2. In each of the following quadrilaterals, find the unknown angle.

Ans. a. We know that sum of four angles of a quadrilateral ABCD is 360°



$\angle A + \angle B + \angle C + \angle D = 360°$

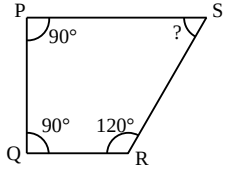
$110° + 60° + \angle C + 80° = 360°$

$250° + \angle C = 360°$

$\angle C = 360° - 250°$

$\angle C = 110°$

b. We know that the sum of four angles of a quadrilateral PQRS is 360°



$\angle P + \angle Q + \angle R + \angle S = 360°$

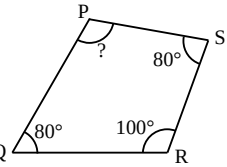
$90° + 90° + 120° + \angle S = 360°$

$300° + \angle S = 360°$

$\angle S = 360° - 300°$

$\angle S = 60°$

c. We know that the sum of four angles of a quadrilateral PQRS is 360°.



$\angle P + \angle Q + \angle R + \angle S = 360°$

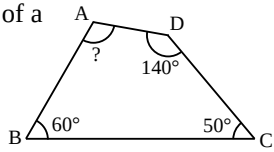
$\angle P + 80° + 100° + 80° = 360°$

$\angle P + 260° = 360°$

$\angle P = 360° - 260°$

$\angle P = 100°$

d. We know that the sum of four angles of a quadrilateral ABCD is 360°



$\angle A + \angle B + \angle C + \angle D = 360°$

$\angle A + 140° + 60° + 50° = 360°$

$\angle A + 250° = 360°$

$\angle A = 360° - 250°$

$\angle A = 110°$

MCQs

Choose the correct option.

Ans. 1. d 2. a 3. c 4. a

Fun with Maths

Solve the crossword puzzle :

Ans.

	1. I	2. S	O	S	C	3. E	L	E	S	
4. R		Q				Q				5. R
6. E	Q	U	A	L		U				H
C		A				I		7. A		O
T		R				L		C		M
A		E				A		U		B
N		8. R	I	G	H	T		T		U
G		9. S	C	A	L	E	N	E		S
L						R				
E						A				
						L				

Chapter

15 Symmetry and Patterns

1. Colour to form a pattern :

Ans. Do it yourself.

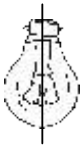
2. Draw the mirror image for the following figures :

Ans. Do it yourself.

Exercise 15 (a)

1. Draw the lines of symmetry for these shapes.

Ans. a.



Yes

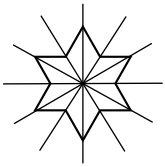
b.

No

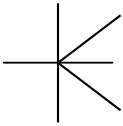
c.

Yes

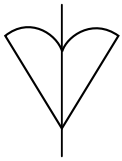
d.



e.

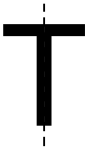


f.

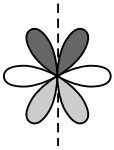


2. Complete the figures treating the dotted line as the line of symmetry.

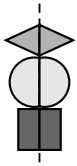
Ans. a.



b.

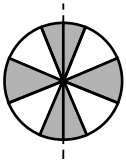


c.



d.

e.



f.

Exercise 15 (b)

1. Give each shape a quarter turn to complete the pattern.

Ans.

SHAPE	$\frac{1}{2}$ Turn	$\frac{1}{4}$ Turn
	→ No Change	→
	→ No Change	→
	→	→
	→	→

2. Give each shape half a turn.

Ans.

a. → No change

b. →

c. → No change

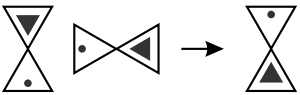
d. →

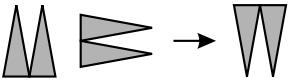
e. →

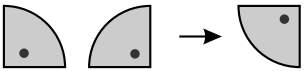
f. →

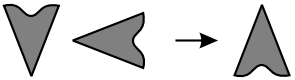
3. What will come next?

Ans.

a. 

b. 

c. 

d. 

Exercise 15 (c)

1. Identify the pattern and fill in the blank.

Ans. a.

37 × 3	=	111
37 × 6	=	222
37 × 9	=	333
37 × 12	=	**444**
37 × 15	=	**555**

b.

(9 – 1) ÷ 8	=	1
(98 – 2) ÷ 8	=	12
(987 – 3) ÷ 8	=	123
(9876 – 4) ÷ 8	=	**1234**
(98765 – 5) ÷ 8	=	**12345**

c.

1 × 9 – 1	=	8
21 × 9 – 1	=	188
321 × 9 – 1	=	2888
4321 × 9 – 1	=	**38888**
54321 × 9 – 1	=	**488888**

d.

12 × 2 + 3	=	27
12 × 3 + 3	=	39
12 × 4 + 3	=	51
12 × 5 + 3	=	**63**
12 × 6 + 3	=	**75**

2. Find any two numbers which are both triangular and square numbers.

Ans. 36

3. Complete the pattern by shading dots. One is done for you.

Ans. Do it yourself.

MCQs

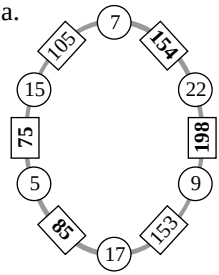
Choose the correct option.

Ans. 1. a 2. b 3. c

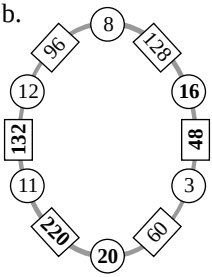
Fun with Maths

1. Complete the pattern :

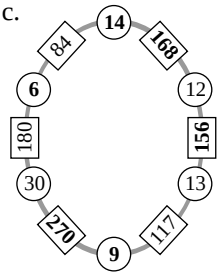
Ans. a.



b.



c.



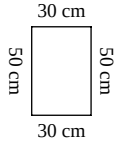
Chapter

16 Perimeter, Area and Volume

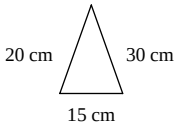
Exercise 16 (a)

1. Find the perimeter of these :

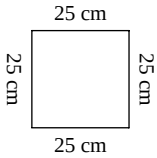
Ans. a. Perimeter = 30 cm + 50 cm + 30 cm + 50 cm
= 160 cm



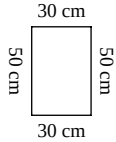
b. Perimeter = 20 cm + 30 cm + 15 cm =65 cm



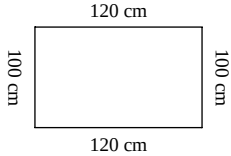
c. Perimeter = 25 cm + 25 cm + 25 cm + 25 cm
= 100 cm



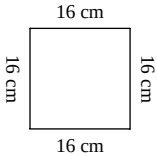
d. Perimeter = 18 cm + 12 cm + 18 cm + 12 cm
= 60 cm



e. Perimeter = 120 cm + 100 cm + 120 cm + 100 cm
= 440 cm



f. Perimeter = 16 cm + 16 cm + 16 cm + 16 cm
= 64 cm



2. Find the missing entry of the rectangle for each of the following :

Ans. a.

Perimeter	=	56 cm
l	=	18 cm
b	=	?
Perimeter	=	2 (l +b)
56 cm	=	2 (18 + b)
$\frac{56}{2}$ cm	=	18 + b
b + 18 cm	=	28 cm
b	=	(28 – 18) cm
b	**=**	**10 cm**

b.

Perimeter	=	192 cm
l	=	?
b	=	46 cm
Perimeter	=	2 (l +b)
192 cm	=	2 (l + 46)
l + 46 cm	=	$\frac{192}{2}$ cm
l + 46 cm	=	96 cm
l	=	(96 – 46) cm
l	**=**	**50 cm**

c.

Perimeter	=	120 cm
l	=	?
b	=	20 cm
Perimeter	=	2 (l +b)
120 cm	=	2 (l + 20)
$\frac{120}{2}$ cm	=	l + 20 cm
l + 20 cm	=	60 cm
l	=	(60 – 20) cm
b	**=**	**40 cm**

d.

Perimeter	=	64 m
l	=	20 m
b	=	?
Perimeter	=	2 (l +b)
64 cm	=	2 (20 + b)
20 m + b	=	$\frac{64}{2}$ m
20 m + b	=	32 m
b	=	(32 – 20) m
b	**=**	**12 m**

e.

Perimeter	=	144 m
l	=	48 m
b	=	?
Perimeter	=	2 (l +b)
144 m	=	2 (48 + b)
48 m + b	=	$\frac{144}{2}$ m
48 m + b	=	72 m
b	=	(72 – 48) m
b	**=**	**24 m**

e.

Perimeter	=	144 m
l	=	48 m
b	=	?

Perimeter = 2 (l +b)
144 m = 2 (48 + b)
48 m + b = $\frac{144}{2}$ m
48 m + b = 72 m
b = (72 – 48) m
b = 24 m

3. Find the side of the square for each of the following :

Ans. a. Perimeter = 15 cm
Side = ?
Side = $\frac{\text{Perimeter}}{4}$
= $\frac{15}{4}$ cm
= 3.75 cm

b. Perimeter = 40 cm
Side = ?
Side = $\frac{\text{Perimeter}}{4}$
= $\frac{40}{4}$ cm
= 10 cm

c. Perimeter = 27 cm
Side = ?
Side = $\frac{\text{Perimeter}}{4}$
= $\frac{27}{4}$ cm
= 6.75 cm

d. Perimeter = 14 m
Side = ?
Side = $\frac{\text{Perimeter}}{4}$
= $\frac{14}{4}$ m
= 3.5 m

e. Perimeter = 120 m
Side = ?
Side = $\frac{\text{Perimeter}}{4}$ = $\frac{120}{4}$ = 30 m

4. Solve these word problems :

Ans. a. l = 36.8 m
b = 12.9 m
perimeter of rectangle = 2 (l + b) m = 2 (36.8 + 12.9) m
= 2 (49.7) m = 99.4 m

b. Side = 29.5 dm
Perimeter of square = 4 × side
= 4 × 29.5 dm = 118 dm

c. Side of triangle are = 6 cm, 6 cm and 4 cm
So, perimeter of triangle = Sum of all sides
= 6 cm + 6 cm + 4 cm = 16 cm

d. For Manisha

l = 220 m

b = 170 m

Perimeter of rectangular park = 2 (l + b)

= 2 (220 + 170) m

= 2 × 390 m = 780 m

Distance covered by Manisha in 4 rounds = 4 × 780 m

= 3120 m

For Roshni

side = 180 m

Perimeter of square = 4 × side

= 4 × 180 m = 720 m

Distance covered by Roshni in 6 rounds = 6 × 720 m

= 4320 m

So, Roshini walks more by 4320 – 3120 = 1200 m

e. Each side of equilateral triangle = 127 cm

Perimeter of equilateral triangle = 3 × side

= 3 × 12.7 cm

= 38.1 cm

So, 38.1 cm ribbon required to cover it.

Now, ribbon required for 5 such packs = 5 × 38.1 cm

= 190.5 cm

Mental Maths

Tick (3) the unit of area you will use to find the area of the following.

Ans.

	sq. cm	sq. m	sq. km
1. A cover page of your maths books	3		
2. A blackboard		3	
3. A hockey field		3	
4. A state of India			3

Project

Ans. Do it yourself.

Exercise 16 (b)

1. Complete the following table.

Ans. a. l = 6 cm

b = 4 cm

Area = l × b

b. l = 16 m

b = ?

Area = 128 m^2

$= 6\text{ cm} \times 4\text{ cm}$

$= 24\text{ cm}^2$

c. $l = 14\text{ cm}$

$b = 7\text{ cm}$

Area $= l \times b$

$= 14\text{ cm} \times 7\text{ cm}$

$= 98\text{ cm}^2$

e. $l = 11\text{ m}$

$b = 9\text{ m}$

Area $= l \times b$

$= 11\text{ m} \times 9\text{ m}$

$= 99\text{m}^2$

$b = l \times b$

$b = A$

b

$= \frac{128\text{ m}^2}{16\text{ m}} = 8\text{ m}$

d. $l = 24\text{ m}$

$b = ?$

$A = 240\text{m}^2$

Area $= l \times b$

$240 = 24 \times b$

$b = \frac{240}{24} = 10\text{ m}$

f. $l = ?$

$A = 270\text{m}^2$

$b = 15\text{ m}$

Area $= l \times b$

$270 = l \times 15$

$l = \frac{270}{15} = 18\text{ m}$

2. Complete the following table.

Ans. a. Side $= 6\text{ cm}$

Area $= (\text{Side})^2$

$= 6\text{ cm} \times 6\text{ cm}$

$= 36\text{ cm}^2$

b. Side $= 9\text{ cm}$

Area $= (\text{Side})^2$

$= (9\text{ cm})^2$

$= 9\text{ cm} \times 9\text{ cm}$

$= 81\text{ cm}^2$

c. Side $= 12\text{ cm}$

Area $= (\text{Side})^2$

$= (12\text{ cm})^2$

$= 12\text{ cm} \times 12\text{ cm}$

$= 144\text{ cm}^2$

d. Side $= 16\text{ m}$

Area $= (\text{Side})^2$

$= (16\text{ m})^2$

$= 16\text{ m} \times 16\text{ m}$

$= 256\text{ m}^2$

e. Side $= 18\text{ m}$

Area $= (\text{Side})^2$

$= (18\text{m})^2$

$= 18\text{ m} \times 18\text{ m}$

$= 324\text{ m}^2$

f. Side $= 25\text{ km}$

Area $= (\text{Side})^2$

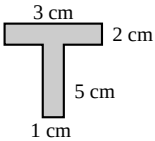
$= (25\text{ km})^2$

$= 25\text{ km} \times 25\text{ km}$

$= 625\text{ km}^2$

3. Find the area of the following.

Ans. a.



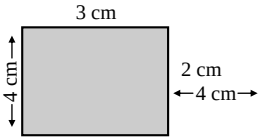
Area = $(3 \times 2 + 5 \times 1)$

= $(6 + 5)\ cm^2 = 11\ cm^2$

= $5\ cm \times 5\ cm$

= $25\ cm^2$

b.



l = 9 cm

b = 7.5 cm

Area = l × b

= 9 cm × 7.5 cm

= $67.5\ cm^2$

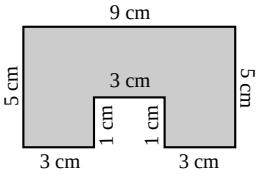
c. Length of big rectangle = 9 cm

Breath of big rectangle = 5 cm

Area of big rectangle = l × b

= 9 × 5

= $45\ cm^2$



Length of small rectangle = 3 cm

Breadth of small rectangle = 1 cm

Area of small rectangle = l × b = 3 × 1 = $3\ cm^2$

So, Area of figure = $(45 - 3)\ cm^2$ = $42\ cm^2$

4. Solve the following :

Ans. a. l = 600 cm = 6 m

b = 550 cm = 5.5 m

Area = l × b = 6 × 5.5 = $33 m^2$

b. No. of tiles required = $\frac{\text{Area of room}}{\text{Area of tile}}$

= $\frac{24\ m \times 18\ m}{80\ cm \times 80\ cm}$

= $\frac{2400\ cm \times 1800\ cm}{80\ cm \times 80\ cm}$

= 30 × 22.5 = 675

So, 675 tiles are required.

c. l = 80 m

b = 20 m

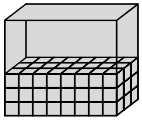
Area = l × b = 80 × 20 = $1600\ m^2$

Cost of ploughing field = `4.50 × 1600 = `7200

d. Length of wall = 50 m
Width of wall = 9 m
Area of wall = l × b
= 9 m × 50 m = 450 m^2
Cost of painting = `12 × 450 = `5400

HOTS

Half the box has been filled with 1 cm cubes. What is the volume of the box?

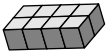


Ans. Number of cubes in length = 8
Number of cubes in breath = 3
Number of cubes in height = 3
Volume of half box = length × breath × height
= 8 × 3 × 3 = 72 cm cubes
Therefore, the volume of complete box = 2 × 72 cm cubes
= 144 cm cubes

Exercise 16 (c)

1. Count the cubes and find the volume in cm^3.

Ans. a.



6 cm^3

b.

12 cm^3

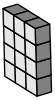
c.

7 cm^3

d.

9 cm^3

e.



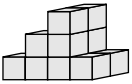
12 cm^3

f.

32 cm^3

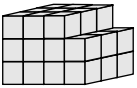
2. Count the number of cubes and find the volume in cu. cm.

Ans. a.



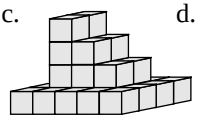
14 cm^3

b.



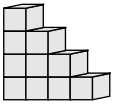
33 cm^3

c.



32 cm^3

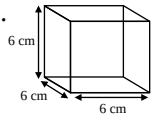
d.



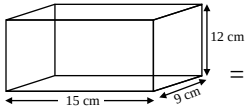
10 cm^3

Mental Maths

Find the volume of the following :

Ans. 1. 

Volume = **216** cu.cm.

2. 

Volume = **1620** cu.cm.

Exercise 16 (d)

1. Find the volume of these objects.

Ans. a. l = 6 cm
b = 5 cm
h = 4 cm
Volume = l × b × h
= 6 × 5 × 4 cm^3
= 120 cm^3

b. l = 10 cm
b = 2 cm
h = 5 cm
Volume = l × b × h
= 10 × 2 × 5
= 100 cm^3

c. l = 10 cm
b = 5 cm
h = 2 cm
Volume = l × b × h
= 10 × 5 × 2
= 100 cm^3

d. l = 10 cm
b = 6 cm
h = 2 cm
Volume = l × b × h
= 10 × 6 × 2
= 120 cm^3

e. l = 12 cm
b = 8 cm
h = 3 cm
Volume = l × b × h
= 12 × 8 × 3
= 288 cm^3

f. l = 15 cm
b = 12 cm
h = 10 cm
Volume = l × b × h
= 15 × 12 × 10 cm^3
= 1800 cm^3

2. Find the volume of each of the following.

Ans. a. l = 52 cm
b = 29 cm
h = 14 cm
Volume = l × b × h
= 62 × 29 × 14
= 2112 cm^3

b. l = 12.4 m
b = 9 m
h = 7 m
Volume = l × b × h
= 12.4 × 9 × 7 m^3
= 781.2 m^3

c. l = 9.6 m
b = 8 m
h = 6 m

d. l = 12.5 cm
b = 10 cm
h = 8 cm

Volume = l × b × h Volume = l × b × h
= 9.6 × 8 × 6 = 12.5 × 10 × 8
= 460.8 m^3 = 781.2 cm^3

e. l = 129 mm b = 57 mm
h = 16 mm
Volume = l × b × h
= 129 × 57 × 16 = 117648 mm^3

3. Solve these story problems.

Ans. a. Side = 5 cm Volume = $(side)^3$
= 5 cm × 5 cm × 5 cm = 125 cm^3
Volume of 20 ice cubes = 20 × 125 cm^3 = 2500 cm^3

b. l = 45 cm b = 20 cm h = 50 cm
Volume of water = Volume of aquarium
= l × b × h
= 45 × 20 × 50 = 45000 cm^3

c. l = 22 cm b = 10 cm h = 8 cm
Volume of an ice cream brick = l × b × h
= 22 × 10 × 8 = 1760 cm^3

d. l = 80 cm b = 40 cm h = 90 cm
Volume of refrigerator = l × b × h
= 80 × 40 × 90 = 288000 cm^3

e. length of room = 10 m breadth of room = 8 m
height of room = 12 m
Volume of room = l × b × h
= 10 × 8 × 12 = 960 m^3

MCQs

Choose the correct option.

Ans. 1. a 2. a 3. c 4. c 5. c

Chapter

17 Time and Temperature

Mental Maths

1. Change into hours and minutes.

Ans. a. 310 min = **5 hour 10 min** b. 500 min = **8 hours 20 min**
c. 670 min = **11 hours 10 min**

2. Change into minutes and seconds.

Ans. a. 400 sec. = **6 min 40 sec** b. 920 sec. = **15 min 20 sec**

c. 1010 sec. = **16 min 50 sec**

Exercise 17 (a)

1. Change into seconds :

Ans. a. **12 minutes**
= 12 × 60 sec.
= 720 sec.

b. **21 minutes**
= 21 × 60 sec.
= 1260 sec.

c. **9.5 minutes**
= 9.5 × 60 sec.
= 9.5 × 60
= 570 sec.

d. **$5\frac{1}{2}$ minutes**
= $\frac{11}{2}$ minutes
= $\frac{11}{2} \times 60$ sec. = 330 sec.

e. **20 minutes 40 seconds**
= 20 × 60 sec + 40 sec.
= 120 sec + 40 sec.
= 160 sec.

f. **66 minutes 13 seconds**
= 66 × 60 sec. + 13 sec.
= (3960 + 13) sec.
= 3973 sec.

2. Change into minutes :

Ans. a. **7 hours**
= 7 × 60 min.
= 420 min.

b. **5 hours**
= 5 × 60 min.
= 300 min.

c. **19 hours 10 minutes**
= 19 × 60 min. + 10 min.
= 1140 min. + 10 min.
= 1150 min.

d. **6 hours 40 minutes**
= (6 × 60 + 40) min.
= (360 + 40) min.
= 400 min.

e. **13.5 hours**
= 13.5 × 60 min.
= 810 min.

f. **$11\frac{1}{2}$ hours**
= $\frac{33}{2}$ hours
= $\frac{23}{2} \times 60$ min. = 690 min.

3. Convert into minutes and seconds :

Ans. a. **225 seconds**

$= \frac{225}{60}$ min.

```
60) 225 (3 min.
   – 180
      45  sec.
```

= 3 min. 45 sec.

b. **360 seconds**

$= \frac{360}{60}$ min.

```
60) 360 (6 min.
   – 360
       x  sec.
```

= 6 min.

c. **381 seconds**

$= \frac{381}{60}$ min.

```
60) 381 (6 min.
   – 360
      21  sec.
```

= 6 min. 21 sec.

d. **2406 seconds**

$= \frac{2406}{60}$ min.

```
60) 2406 (40 min.
   – 240
       06
    – 06
        6  sec.
```

= 40 min. 6 sec.

e. **1800 seconds**

$= \frac{1800}{60}$ min.

```
60) 1800 (30 min.
   – 180
       0
     – 0
       x  sec.
```

= 30 min.

f. **1760 seconds**

$= \frac{1760}{60}$ min.

```
60) 1760 (29 min.
   – 120
     560
   – 540
      20  sec.
```

= 29 min.20 sec.

4. Convert into hours and minutes :

Ans. a. **108 minutes**

$= \frac{108}{60}$ hours

```
60) 108 (1 hr.
   – 60
     48  min.
```

= 1 hr 48 min.

b. **840 minutes**

$= \frac{840}{60}$ hours

```
60) 840 (14
   – 60
     240
   – 240
       x
```

= 14 hours.

c. **600 minutes**

$= \frac{600}{60}$ hours

```
60) 600 (10
   – 60
       0
     – 0
       x
```

= 10 hours.

d. **788 minutes**

$= \frac{788}{60}$ hours

e. **1000 minutes**

$= \frac{1000}{60}$ hours

f. **520 minutes**

$= \frac{520}{60}$ hours

```
60) 788 (13
   – 60
    188
   – 180
      8
```

```
60)1000 (1 hr.
   – 60
    400
   – 360 min.
     40
```

```
60) 520 (8 hr.
   – 480
     40 min.
```

= 13 min. 8 sec. = 1 hours 40 min. = 8 hours 40 min.

5. Convert into hours :

Ans. a. **18 days**

= 18 × 24 hours

= 432 hours

b. **7 days**

= 7 × 24 hours

= 168 hours

c. **14 days**

= 14 × 24 hours

= 336 hours

d. **9.5 days**

= 9.5 × 24 hours

= $\frac{95}{10}$ × 24 hours

= 228 hours

e. **28.5 days**

= 28.5 × 24 hours

= $\frac{285}{10}$ × 24 hours

= 684 hours

f. **5 $\frac{1}{2}$ days**

= $\frac{11}{2}$ days

= $\frac{11}{2}$ × 24 hours

= 132 hours

6. Convert :

Ans. a. **636 minutes into hours and minutes**

= 636 min.

= $\frac{636}{60}$ hours

```
60) 636 (10
   – 60
     36
   – 00
     36
```

= 10 hours 36 min.

b. **360 seconds into minutes and seconds**

= 360 sec.

= $\frac{360}{60}$ min.

```
60) 360 (6
   – 360
       x
```

= 6 min.

c. **55 hours into days and hours**

= 55 hours

d. **765 days into years and days**

= 765 days

$= \frac{55}{24}$ days

```
24)55(2
  – 48
  ----
     7
```

= 2 days 7 hours.

e. **54 months into years and months**

= 54 months

$= \frac{54}{12}$ years

```
12)54(4
  – 48
  ----
     6
```

= 4 years 6 months

$= \frac{765}{365}$ years

```
365)765(2
   – 730
   -----
      35
```

= 2 years 35 days

f. **96 weeks into months**

= 96 weeks

$= \frac{96}{4}$ months

```
4) 96 (24
  – 8
  ----
    16
  – 16
  ----
     x
```

= 24 months.

Exercise 17 (b)

1. Add :

Ans. a.

	hour	min
	48	44
+	29	26
	78	10

b.

	min	sec
	18	33
+	30	42
	49	15

c.

	hour	min	sec
	7	40	37
+	2	27	38
	10	08	15

d.

	hour	min	sec
	17	40	25
+	3	36	16
	21	16	41

2. Find the sum :

Ans. a.

	min	sec
	1	
	35	26
+	42	52
	78	18

= 78 min. 18 sec.

b.

	hours	min	sec
	1	1	
	12	54	4
+	7	43	58
	20	38	02

= 20 hours 38 min 2 sec.

c.

	years	months
	1	
	12	6
+	3	9
	16	3

= 16 years 3 months

3. Subtract :

Ans. a.

	min	sec
	62	70
	63	10
–	19	45
	43	25

b.

	hours	min
	49	60
	50	00
–	42	37
	7	23

c.

	hours	min	sec
		65	70
	16	66	10
–	8	42	29
	8	23	41

d.

	hours	min	sec
	72	114	80
	73	55	30
–	18	58	57
	44	56	23

4. Subtract :

Ans. a. **42 minutes 38 seconds from 50 minutes 17 seconds**

= 50 min. 17 sec. – 42 min. 38 sec.

= 7 min. 39 sec.

	min	sec
	49	77
	50	17
–	42	38
	7	39

b. **13 hours 28 minutes from 16 hours 12 minutes**

= 16 hours 12 min. – 13 hours 28 min.

	hour	min
	11	11
	16	12
+	13	28
	2	44

= 2 hours 44 min.

c. **15 years 9 months from 18 years 5 months.**

= 18 years 5 months – 15 years 9 months

	years	months
	17	17
	18	5
+	15	9
	2	8

= 2 years 8 months

5. Solve the following story sums :

Ans. a.

Vinay studies for	=	1 2 hour	75 15 min
Nishant studies for	=	– 1 hour	45 min
Vinay studies for longer period	=	**0 hour**	**30 min**

So Vinay studies 30 min. longer than Nishant.

b.

Express train takes=	7 hour	6	85 25 min
Super fast trains takes	=	– 5 hour	45 min
Time saved by faster train	=	**1 hour**	**40 min**

So, 1 hour 40 min saved If we travel by faster train.

c. Vidhi studies in the morning = 2 hour 15 min
Vidhi studies in the evening = + 1 hour 50 min

Total time spent by Vidhi in studying = **4 hour 5 min**

So, she spend 4 hours 5 min. for studying in a day.

d. Mihir studied in Bangalore = 4 years 6 months
He worked in Mumbai = + 5 years 10 months
He remained away from his town = **10 years 4 months**

So, Mihir was 10 years 4 months away from his home town.

e. Arnav's age = 7 years 9 months
Kajal is older than Arnav = + 1 year 6 months

So, Kajal is age = **9 years 3 months**

So, age of Kajal is 9 years 3 months old.

HOTS

Ans. 28 Feb and 1 March

Exercise 17 (c)

1. Find the duration of time :

Ans. a. **5 : 25 p.m. to 2 : 10 a.m.**

5 : 25 p.m. = 1725 hours to 2400 hours
= 8 hours 35 min

Now, 635 hours + 210 hours = 845 hours

Duration = 8 hours 45 min.

2360
2400
– 1725
0635
+ 210
845

b. **9 : 10 a.m. to 4 : 50 p.m.**
9 : 10 hours to 1650 hrs.
Duration = 7 hours 40 min.

c. **8 : 10 a.m. to 1 : 40 p.m.**
810 hours to 1340 hours
Duration = 530 hours
5 hours 30 min.

$$\begin{array}{r} 1650 \\ -910 \\ \hline 740 \end{array}$$

$$\begin{array}{r} 1340 \text{ hours} \\ -810 \text{ hours} \\ \hline 530 \text{ hours} \end{array}$$

d. **8 : 45 p.m. to 12 : 00 noon**
8 : 45 p.m. to 12 : 00 midnight
2045 hour to 2400 hours
So, 8 : 45 p.m. to 12 : 00 noon
Duration = 3 : 15 + 12 : 00 hrs
15 : 15 hours = 15 hours
15 minutes.

$$\begin{array}{r} 2360 \\ 2400 \text{ hours} \\ -2045 \text{ hours} \\ \hline 215 \text{ hours} \end{array}$$

2. Solve :

Ans. a. Application given on = 12 January
Leave = 40 days
Days 12 Jan to 31 Jan = (31 – 12 + 1) = 20 days
20 days in Feb.
So, he will join office on 21th Feb.

b. Hockey match finished = 1 : 10 p.m.
Duration of match = 90 min.

1 : 10 p.m. $\xrightarrow{1 \text{ hr}}$ 12 : 10 p.m. $\xrightarrow{30 \text{ min.}}$ 11 : 40 a.m.
So, Match start at 11 : 40 a.m.

c. Vimal went on leave = March 13
He joined duty = On April 15
13 March to 31 March = (31 – 13) = 18 days
1 April to 15 April = 15 – 1 = 14 days
So, He was on leave for 18 + 14 = 32 days

d. The train reached its destination = 7 : 45 p.m.
Time taken by train = 10 hour 15 min.
So, Beginning time of train = 7 : 45 p.m. – 10 hrs. 15 min.
or = 1945 hours – 1015 hours
= 830 hours or 8 : 30 a.m.

e. Match over = 6 : 15 p.m.

Duration of match = 1 hour 40 min.

Starting time of match = 6 : 15 p.m. $\xrightarrow{1\text{ hr}}$ 5 : 15 p.m.

= 5 : 15 p.m. $\xrightarrow{40\text{ min.}}$ 4 : 35 p.m.

Exercise 17 (d)

1. Convert the following into Celsius scale :

Ans. a. **86°F**

86° – 32° = 54°
54° × 5 = 270°
270° ÷ 9 = 30°
So, 86° F = 30° C

b. **203°F**

203° – 32° = 171°
171° × 5 = 855°
855° ÷ 9 = 95°
So, 203° F = 95° C

c. **131.9°F**

131.9° – 32° = 99.9°
99.9° × 5 = 499.5°
499.5° ÷ 9 = 55.5°
So, 131.9° F = 55.5°C

d. **122°F**

122° – 32° = 90°
90° × 5 = 450°
450° ÷ 9 = 50°
So, 122.5° F = 50°C

e. **104°F**

104° – 32° = 82°
72° × 5 = 360°
360° ÷ 9 = 40°
So, 104°F = 40°C

f. **194°F**

194°F – 32° = 162°
162° × 5 = 810°
810° ÷ 9 = 90°
So, 194°F = 90°C

g. **108.5°F**

108.5° – 32° = 76.5°
76.5° × 5 = 382.5°
382.5° ÷ 9 = 42.5°
So, 108.5°F = 42.5°C

h. **95°F**

95° – 32° = 63°
63° × 5 = 315°
315° ÷ 9 = 35°
So, 95°F = 35°C

2. Convert the following into Fahrenheit scale :

Ans. a. **0°C**

0° × 9 = 0°
0° ÷ 5 = 0°
0° + 32° = 32°F
So, 0°C = 32°F

b. **65°C**

65° × 9 = 585°
585° ÷ 5 = 117
117° + 32° = 149°
So, 65°C = 149°F

c. **37.5°C**

d. **75°C**

37.5° × 9 = 337.5°
337.5° ÷ 5 = 67.5°
67.5° + 32° = 99.5°
So, 37.5°C = 99.5°F

75° × 9 = 675°
675° ÷ 5 = 135°
135° + 32° = 167°
So, 75°C = 167°F

e. **95°C**
95° × 9 = 855°
855° ÷ 5 = 171°
171° + 32° = 203°
So, 95°C = 203°F

f. **35°C**
35° × 9 = 315°
315° ÷ 5 = 63°
63° + 32° = 95°
So, 35°C = 95°F

g. **90.5°C**
90.5° × 9 = 814.5°
814.5° ÷ 5 = 162.9°
162.9° + 32° = 194.9°
So, 90.5°C = 194.9°F

h. **50°C**
50° × 9 = 450°
450° ÷ 5 = 90°
90° + 32° = 122°
So, 50°C = 122°F

3. Fill in the blanks :

Ans. a. Doctors use **clinical** thermometer.
b. Liquid used in thermometer is called **mercury**.
c. The normal body temperature of a person is **37** °C or **98.6** °F.
d. Water boils at **100** °C and freezes at **32** °F.
e. When the temperature was 5°C, I had to wear **woolen clothes** to protect myself.

4. Find :

a. Temperature was recorded in the morning = 25°C
25° × 9 = 225° 225° ÷ 5 = 45° 45° + 32° = 77° or 77°F
Temperature increased = 10°F
So, temperature = (37° + 10°) F = 87°F

b. Yes, because 37°C is the normal temperature of the human body.

c. 0°C or 32°F

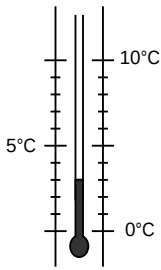
MCQs

Choose the correct option.

Ans. 1. a 2. b 3. c 4. a

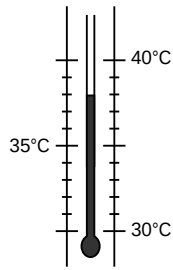
Read these temperature.

Ans. a.



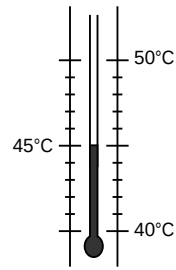
About 3°C

b.



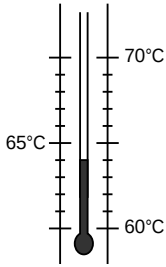
About 38°C

c.



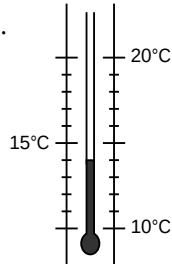
About 45°C

d.



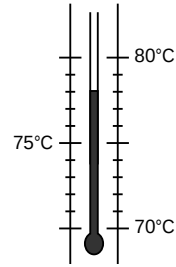
About 64°C

e.



About 14°C

f.



About 78°C

Chapter

18 Data Handling

Exercise 18 (a)

1. The following data represents the number of children in 30 families of a locality.

Ans.

No. of students	Tally Marks	Frequency
0	III	4
1	~~IIII~~	5
2	~~IIII~~ III	8
		2
		1
		12
		3

3	卌	5
4	卌	4
5	卌	3
6	II	2
	Total	30

2. Prepare a table for the following data showing the weight of 35 students of a class.

Ans.

Height of students	Tally Marks	Frequency
35	IIII	4
37	卌	5
38	卌 III	8
39	II	2
40	I	1
42	卌 卌 II	12
45	III	3
	Total	35

3. The following is the data of different fast food liked by 30 students of class V. P. stands for Pizza, B for Burger, M for Momos, S for Sandwich and C for Chowmein.

Ans.

S.No.	Fast Food	Students
1.	Pizza	7
2.	Berger	5
3.	Monos	9
4.	Sandwich	7
5.	Chowmein	2
	Total	30

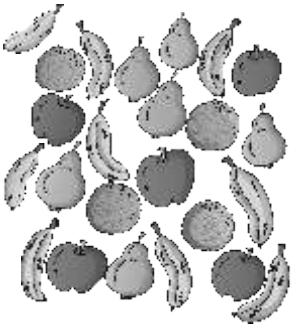
a. Chowmein, only by 2 students.

b. Monos, by 9 students. c. Pizza and Sandwich.

d. 5 students.

4. Arrange the following fruits in the tabular form.

Ans.



Fruit	Number of Fruits
Apple	5
Orange	4
Banana	9
Guava	6

5. Read the pictograph about favourite holiday destinations of various children in a locality and answer the following question.

Ans.

Days	Number of children
Kerala	☺ ☺ ☺ ☺ ◐
Shimla	☺ ☺ ☺ ◐
Goa	☺ ☺ ◐
Ooty	☺ ☺ ☺
Nainital	☺ ☺ ☺

a. Kerala b. Goa

c. 30 d. 25

Here,

☺ = 10 People

◐ = 5 People

6. Draw a pictograph to represent the following data.

Ans. Scale :

☺ = 10 students

☺ = 5 students

S.No.	Mode of transport	No. of students
1.	Bus	☺☺☺☺☺☺☺☺☺◐
2.	Cycle	☺☺☺☺☺☺☺☺◐
3.	Auto	☺☺☺☺☺☺☺◐
4.	Van	☺☺☺☺☺☺☺☺
5.	Walk	☺☺☺☺☺☺☺◐

Mental Maths

Do it yourself.

Exercise 18 (b)

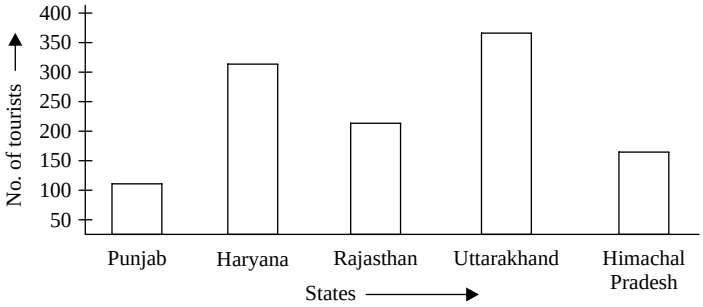
1. The following graph represents the number of people of different countries in a world summit.

Ans. (a) 500 (b) America (c) India
(d) China and Japan (e) 1350

2. Number of tourists visited the states during a particular month are shown in the table given below.

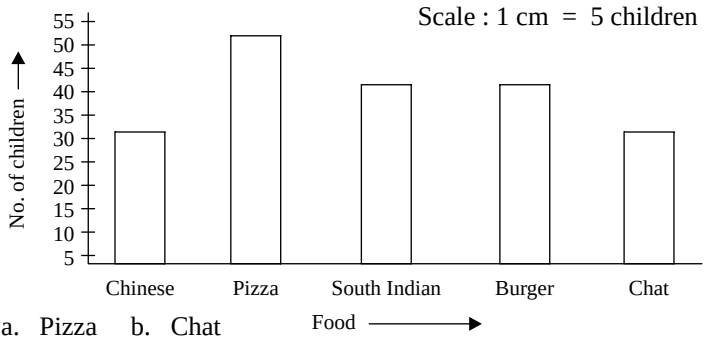
Ans. Scale :

1 cm on y axis = 50 tourist



3. The following data shows the number of children who like following types of fast food.

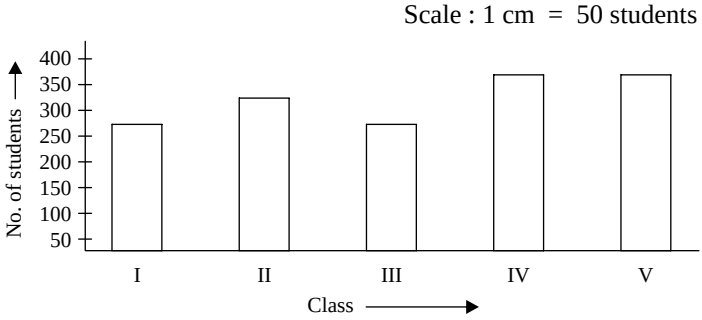
Ans.



a. Pizza b. Chat

4. The following data is about the number of students in class I to V in a school :

Ans.



Exercise 18 (c)

1. The students of class V voted for their favourite cartoon character. The data has been represented as a pie-chart given below. Study the pie chart and answer the following questions.

Ans. a. Doraemon b. Oogy c. Chota Bheem

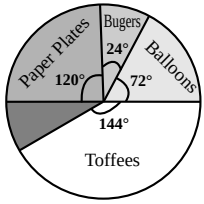
d. Oogy < Shinchan < Chota Bheem < Doraemon

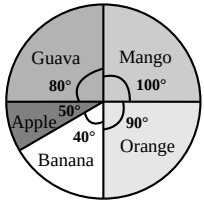
2. Draw pie charts for the following data.

Ans. a.

Items	Quantity purchased	Angle Covered
Balloons	60	$\frac{60}{300} \times 360° = 72°$

Toffees	120	$\frac{120}{300} \times 360° = 144°$
Paper plates	100	$\frac{100}{300} \times 360° = 120°$
Burgers	20	$\frac{20}{300} \times 360° = 24°$
Total	**300**	



b.

Types of tree	Number of trees	Angle Covered
Mango	10	$\frac{10}{36} \times 360° = 100°$
Guava	8	$\frac{8}{36} \times 360° = 80°$
Apple	5	$\frac{5}{36} \times 360° = 50°$
Orange	9	$\frac{9}{36} \times 360° = 90°$
Banana	4	$\frac{4}{36} \times 360° = 40°$
Total	**36**