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# **MATHEMATICS**

(Based on latest syllabus prescribed by N.C.E.R.T. as per C.B.S.E. guidelines)

**BANYAN TREE PUBLICATIONS**  
NOIDA - NEW DELHI

# Part-4

## Chapter-1 (Roman Numbers)

### Exercise 1.1

- Write the following numbers in Hindu - Arabic numerals :
  - XXIV = Twenty Four
  - VI = Six
  - XXIX = Twenty Nine
  - XII = Twelve
  - XV = Fifteen
  - XVII = Eighteen
- Write the following numbers in Roman numerals :
  - 19 = XIX
  - 16 = XVI
  - 32 = XXXII
  - 4 = IV
  - 24 = XXIV
  - 38 = XXXVIII
- Fill in the blanks with Roman numerals:
  - 12 =  $\boxed{10 + 2}$  =  $\boxed{XII}$
  - 30 =  $\boxed{10 + 10 + 10}$  =  $\boxed{XXX}$
  - 24 =  $\boxed{10 + 10 + 4}$  =  $\boxed{XXIV}$
  - 38 =  $\boxed{10 + 10 + 10 + 5 + 3}$  =  $\boxed{XXXVIII}$
  - 36 =  $\boxed{10 + 10 + 10 + 5 + 1}$  =  $\boxed{XXXVI}$
  - 15 =  $\boxed{10 + 5}$  =  $\boxed{XV}$
  - 32 =  $\boxed{10 + 10 + 10 + 2}$  =  $\boxed{XXXII}$
  - 18 =  $\boxed{10 + 5 + 3}$  =  $\boxed{XVIII}$
  - 14 =  $\boxed{10 + 4}$  =  $\boxed{XIV}$
  - 16 =  $\boxed{10 + 5 + 1}$  =  $\boxed{XVI}$
  - 19 =  $\boxed{10 + 9}$  =  $\boxed{XIX}$
  - 28 =  $\boxed{10 + 10 + 5 + 3}$  =  $\boxed{XXVIII}$
- Fill in > or < :
  - XI  $\boxed{>}$  IX
  - XIX  $\boxed{<}$  XX
  - XV  $\boxed{>}$  XIII
  - V  $\boxed{>}$  IV
  - XVI  $\boxed{<}$  XIX
  - XXXIV  $\boxed{<}$  XXXV
- Arrange in descending order :
  - XI, IX, VIII, VI, IV
  - XX, XVI, XIV, X, IX, VIII
- Write the time shown by the clocks :
  - XX
  - XXXVII
  - XV
  - XXIX

### Exercise 1.2

- Write the Roman numerals for the following :
  - 6 = VI
  - 21 = XXI
  - 32 = XXXII
  - 46 = XLVI
  - 8 = VIII
  - 39 = XXXIX
  - 12 = XII
  - 43 = XLIII
  - 16 = XVI

- (j)  $58 = \text{LVIII}$       (k)  $48 = \text{XLVIII}$       (l)  $64 = \text{LXIV}$   
 (m)  $100 = \text{C}$       (n)  $29 = \text{XXIX}$       (o)  $76 = \text{LXXVI}$   
 (p)  $68 = \text{LXVIII}$
2. Write the Hindu-Arabic numerals for the following :
- (a)  $\text{XIII} = 13$       (b)  $\text{XLIV} = 44$       (c)  $\text{VI} = 6$   
 (d)  $\text{LII} = 52$       (e)  $\text{XLVII} = 47$       (f)  $\text{LVII} = 57$   
 (g)  $\text{L} = 50$       (h)  $\text{LV} = 55$       (i)  $\text{XXVII} = 27$   
 (j)  $\text{LXXXVI} = 76$       (k)  $\text{XVI} = 16$       (l)  $\text{LXVII} = 67$   
 (m)  $\text{XCIII} = 93$       (n)  $\text{LVII} = 57$       (o)  $\text{XCVI} = 96$   
 (p)  $\text{XLVIII} = 48$
3. Tick (✓) the wrong Roman numerals :
- (a)  $4 = \text{IV}, \text{VI}$       (b)  $22 = \text{XXIII}, \text{XXII}$   
 (c)  $12 = \text{XI}, \text{XII}$       (d)  $34 = \text{XXIV}, \text{XXXIV}$   
 (e)  $44 = \text{XLVI}, \text{XLIV}$       (f)  $45 = \text{XLV}, \text{XLIV}$   
 (g)  $57 = \text{LVII}, \text{LXI}$       (h)  $59 = \text{LXI}, \text{LIX}$
4. Match the Roman numerals with equivalent Hindu-Arabic numerals :
- (a)  $\text{LXXXII}$       82  
 (b)  $\text{XIII}$       13  
 (c)  $\text{LIV}$       54  
 (d)  $\text{LXXXVI}$       76  
 (e)  $\text{XCVI}$       96
5. Write the predecessor :
- (a)  $\boxed{\text{III}}$       IV      (b)  $\boxed{\text{XIII}}$       XIV      (c)  $\boxed{\text{LI}}$       LII  
 (d)  $\boxed{\text{LXIV}}$       LXV      (e)  $\boxed{\text{XXII}}$       XXIII      (f)  $\boxed{\text{XLI}}$       XLII
6. Write the successor :
- (a)  $\text{XLIX}$        $\boxed{\text{L}}$       (b)  $\text{LXIII}$        $\boxed{\text{LXIV}}$       (c)  $\text{III}$        $\boxed{\text{IV}}$   
 (d)  $\text{XIX}$        $\boxed{\text{XX}}$       (e)  $\text{LXXXII}$        $\boxed{\text{LXXXIII}}$       (f)  $\text{VII}$        $\boxed{\text{VIII}}$
7. Put  $>$  or  $<$  :
- (a)  $\text{XI} < \text{XII}$       (b)  $\text{C} > \text{LXXXVIII}$       (c)  $\text{XIX} < \text{XX}$   
 (d)  $\text{LX} > \text{XL}$       (e)  $\text{XL} > \text{XXXIII}$       (f)  $\text{LXXXIX} < \text{XC}$
8. Arrange the numbers in ascending order :
- (a) IV, VI, VII, IX      (b) IX, XIV, XIX, XXV  
 (c) XL, XLIV, LII, LX
9. Arrange the numbers in descending order :
- (a) LX, LI, XLIX, XL      (b) IX, VIII, V, IV  
 (c) XXX, XXV, XIX, XIV
10. Add :
- (a)  $\text{IV} + \text{VIII} = \underline{\text{XII}}$       (b)  $\text{XI} + \text{IV} = \underline{\text{XV}}$

(c)  $LX + X = \underline{LXX}$

(d)  $XC + XII = \underline{CII}$

(e)  $VI + XII = \underline{XVIII}$

(f)  $LXXXVII + III = \underline{XC}$

11. Subtract :

(a)  $XII - VI = \underline{VI}$

(b)  $XI - V = \underline{VI}$

(c)  $X - IV = \underline{VI}$

(d)  $L - X = \underline{XL}$

(e)  $C - L = \underline{L}$

(f)  $XC - XI = \underline{LXXIX}$

12. Fill in the blanks :

(a) D

(b) D

(c) three

(d) L, C, M

(e) V, X

### Exercise 1.3

Tick (✓) the correct answer :

1. (b)

2. (a)

3. (c)

4. (c)

5. (a)

6. (c)

7. (a)

## Chapter-2 (Large Numbers)

### Exercise 2.1

1. Write in Numerals :

(a) 6043

(b) 3205

(c) 9922

(d) 1099

2. Write in words :

(a) 2546 = Two thousand five hundred forty six

(b) 1092 = One thousand ninety two

(c) 9563 = Nine thousand five hundred sixty three

(d) 8469 = Eight thousand four hundred sixty nine

3. Count backward and fill in :

(a) 2008 = 2007, 2006, 2005, 2004

(b) 9653 = 9652, 9651, 9650, 9649

(c) 4892 = 4891, 4890, 4889, 4888

(d) 5650 = 5649, 5648, 5647, 5646

4. Count forward and fill in :

(a) 3654 = 3655, 3656, 3657, 3658

(b) 2096 = 2097, 2098, 2099, 2100

(c) 5498 = 5499, 5500, 5501, 5502

(d) 8493 = 8494, 8495, 8496, 8497

5. Write the place value of each digit of the given numerals :

(a) 2 2000

(b) 9 9000

(c) 4 4000

(d) 5 5000

4 400

0 000

6 600

4 400

6 60

8 80

3 30

6 60

8 8

3 3

4 4

3 3

6. Write the number in between :

(a) 2568 2569 2570

(b) 8054 8055 8056

(c) 4586 4587 4588

(d) 3596 3597 3598

7. Write the numbers in expanded form :

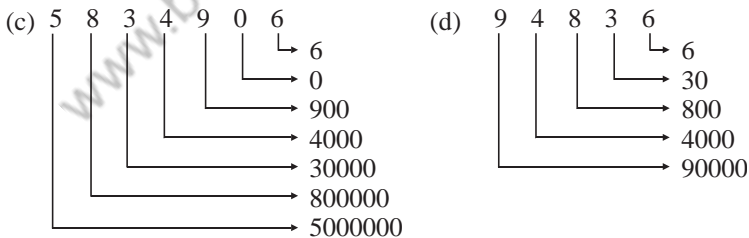
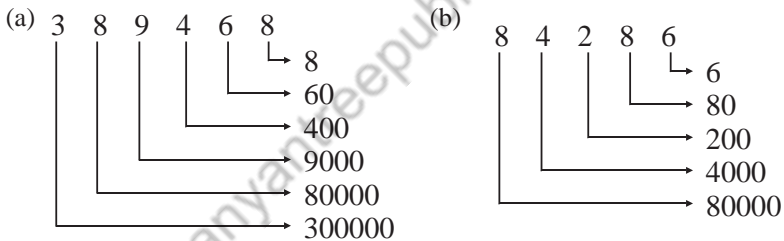
(a)  $2056 = 2000 + 50 + 6$

(b)  $5962 = 5000 + 900 + 60 + 2$

8. Form the biggest and the smallest four - digit numbers with the digits 9, 3, 0, 2  
 Biggest = 9320                      Smallest = 2039
9. Separate the even numbers and odd numbers :  
 Even numbers = 5350, 3608, 2484, 8804, 6678  
 Odd numbers = 2797, 7281, 2987, 8383, 9515

### Exercise 2.2

1. Write the number name of the following numerals :  
 (a) 28946 = Twenty eighth thousand nine hundred forty six.  
 (b) 583200 = Five lakh eighty three thousand two hundred.  
 (c) 9432896 = Ninety four lakh thirty two thousand eight hundred ninety six.  
 (d) 4389600 = Forty three lakh eighty nine thousand six hundred.  
 (e) 294680 = Two lakh ninty four thousand six hundred eighty.  
 (f) 764988 = Seven lakh sixty four thousand nine hundred eighty eight.
2. Write the numerals :  
 (a) 36194                      (b) 40089015                      (c) 6803208  
 (d) 543704                      (e) 96200
3. Fill in the blanks :  
 (a) 10                      (b) 1                      (c) 10                      (d) 10                      (e) 1
4. Write the place value of each digit of the following numerals:



5. Write the expanded form of the following numerals :  
 (a)  $50000 + 4000 + 900 + 80 + 0$   
 (b)  $2000000 + 300000 + 40000 + 6000 + 900 + 60 + 0$   
 (c)  $200000 + 90000 + 4000 + 600 + 80 + 3$   
 (d)  $500000 + 90000 + 8000 + 700 + 40 + 3$

6. Write the short form of the following numerals :  
 (a) 82293 (b) 38635 (c) 7694693 (d) 372598 (e) 635289
7. Biggest five digit number 99999 Smallest five digit number 10000
8.  $8000 - 800 = 7200$
9. Write the successor of each :  
 (a) 389543 (b) 28,54,937 (c) 54891 (d) 894631
10. Write the predecessor of each:  
 (a) 24209 (b) 549217 (c) 589386 (d) 2486842
11. Put  $>$  or  $<$  :  
 (a)  $>$  (b)  $<$  (c)  $<$  (d)  $>$  (e)  $>$  (f)  $>$  (g)  $<$  (h)  $<$  (i)  $<$  (j)  $>$
12. Arrange the numbers in ascending order :  
 (a) 25,683; 62,823; 743850; 11,61,090  
 (b) 45,678; 52572; 2,37,691; 3,34,571  
 (c) 79,00; 39360; 27,52, 918; 50,00,900  
 (d) 33792; 38572; 38,892; 45,678
13. Arrange the numbers in descending order :  
 (a) 26000; 17000; 15,000; 9,000  
 (b) 66,44,951; 24,17,592; 7,38,562; 42,941  
 (c) 32,36,400; 20,24,284; 16,20,240; 8,12,160  
 (d) 99,44,951; 43,17,592; 7,38,562; 24,149
14. Find the smallest numebr in each set :  
 (a) 7007 (b) 50091 (c) 6506 (d) 75571
15. Find the greatest number in each set :  
 (a) 23717 (b) 85,692 (c) 38034 (d) 42111

### Exercise 2.3

1. Form the biggest and smallest six digit numbers with the given digits :  
 (a) Biggest = 985321 ; smallest = 123589  
 (b) Biggest = 987310 ; smallest = 103789  
 (c) Biggest = 864210 ; smallest = 102468
2. Use the digits to build the biggest and the smallest five - digit numbers possible.  
 You may repeat the digits :  
 (a) Biggest = 83108 ; smallest = 10388  
 (b) Biggest = 65206 ; smallest = 20566  
 (c) Biggest = 87622 ; smallest = 26782

### Exercise 2.4

**Tick (✓) the correct answer :**

1. (a)            2. (b)            3. (a)            4. (b)            5. (a)

## Chapter-3 (Addition of Numbers)

### Exercise 3.1

1. Add :

$$\begin{array}{r} \text{(a)} \quad \begin{array}{cccc} \text{Th} & \text{H} & \text{T} & \text{O} \\ & 2 & 4 & 6 & 2 \\ + & 3 & 4 & 2 & 5 \\ \hline & 5 & 8 & 8 & 7 \end{array} \end{array}$$

$$\begin{array}{r} \text{(b)} \quad \begin{array}{cccc} \text{Th} & \text{H} & \text{T} & \text{O} \\ & 8 & 2 & 0 & 2 \\ + & 1 & 1 & 5 & 4 \\ \hline & 9 & 3 & 5 & 6 \end{array} \end{array}$$

$$\begin{array}{r} \text{(c)} \quad \begin{array}{cccc} \text{Th} & \text{H} & \text{T} & \text{O} \\ & 7 & 5 & 2 & 6 \\ + & 2 & 4 & 5 & 1 \\ \hline & 9 & 9 & 7 & 7 \end{array} \end{array}$$

$$\begin{array}{r} \text{(d)} \quad \begin{array}{cccc} \text{Th} & \text{H} & \text{T} & \text{O} \\ & \textcircled{1} & \textcircled{1} & \\ & 2 & 5 & 6 & 5 \\ & 1 & 0 & 2 & 5 \\ + & 3 & 2 & 1 & 6 \\ \hline & 6 & 8 & 0 & 6 \end{array} \end{array}$$

$$\begin{array}{r} \text{(e)} \quad \begin{array}{cccc} \text{Th} & \text{H} & \text{T} & \text{O} \\ & \textcircled{1} & \textcircled{1} & \\ & 5 & 0 & 2 & 8 \\ & 1 & 6 & 5 & 7 \\ + & 2 & 2 & 5 & 1 \\ \hline & 8 & 9 & 3 & 6 \end{array} \end{array}$$

$$\begin{array}{r} \text{(f)} \quad \begin{array}{cccc} \text{Th} & \text{H} & \text{T} & \text{O} \\ & \textcircled{1} & & \textcircled{1} \\ & 7 & 6 & 2 & 5 \\ & 8 & 5 & 0 & 5 \\ + & 0 & 6 & 3 & 1 \\ \hline & 1 & 6 & 7 & 6 & 1 \end{array} \end{array}$$

2. Fill in the blanks :

(a)  $2468 + 1032 = 1032 + \boxed{2468}$

(b)  $3086 + \boxed{5460} = 5460 + \boxed{3086}$

(c)  $9062 + \boxed{3890} + 3246 = \boxed{9062} + 3890 + \boxed{3246}$

(d)  $8890 + 0 = \boxed{8890}$

3.

$$\begin{array}{r} \text{Th} & \text{H} & \text{T} & \text{O} \\ \textcircled{1} & \textcircled{1} & & \\ & 5 & 8 & 3 & 2 \\ + & 6 & 4 & 9 & 6 \\ \hline & 1 & 2 & 3 & 2 & 8 \end{array}$$

Boys took an exams  
Girls took an exams  
Total children took exams

4.

$$\begin{array}{r} 8 & 4 & 6 & 2 & 3 & 0 \\ + & 2 & 2 & 4 & 5 & 0 & 0 \\ \hline 1 & 0 & 7 & 0 & 7 & 3 & 0 \end{array}$$

Mayur's car cost  
Han's car cost more  
the mayur's cost  
Han's car cost

5. Th H T O

$$\begin{array}{r} \textcircled{1} & & & \\ & 4 & 0 & 8 & 2 \\ + & 5 & 6 & 2 & 4 \\ \hline & 9 & 7 & 0 & 6 \end{array}$$

English books in library  
Hindi books in library  
Total books in library

### Exercise 3.2

1. Fill in the blanks with the correct digits :

$$\begin{array}{r} \text{(a)} \quad \begin{array}{cccc} \text{Th} & \text{H} & \text{T} & \text{O} \\ \textcircled{1} & & \textcircled{1} & \\ & 3 & 0 & 1 & 2 \\ & 2 & 5 & 2 & 5 \\ + & 3 & 6 & 5 & 5 \\ \hline & 9 & 1 & 9 & 2 \end{array} \end{array}$$

$$\begin{array}{r} \text{(b)} \quad \begin{array}{cccc} \text{Th} & \text{H} & \text{T} & \text{O} \\ \textcircled{1} & \textcircled{1} & \textcircled{1} & \\ & 2 & 5 & 6 & 3 \\ & 5 & 7 & 1 & 5 \\ + & 1 & 3 & 5 & 9 \\ \hline & 9 & 6 & 3 & 7 \end{array} \end{array}$$

2. Fill in the blanks :

(a)  $25630 + 0 = \boxed{25630}$

(b)  $0 + 8635 = \boxed{8635}$

(c)  $24690 + 50834 = 50834 + \boxed{24690}$

$$(d) \boxed{0} + 40963 = 40963 + \boxed{0}$$

$$(e) 90436 + 24631 + \boxed{32096} = 32096 + 24631 + 90436$$

$$(f) 76321 + \boxed{0} = \boxed{76321}$$

$$(g) \boxed{0} + 35962 = \boxed{35962}$$

### Exercise 3.3

1. Add :

$$(a) \begin{array}{r} \text{T-ThTh H T O} \\ 2\ 4\ 6\ 2\ 8 \\ + 5\ 2\ 3\ 5\ 1 \\ \hline 7\ 6\ 9\ 7\ 9 \end{array}$$

$$(b) \begin{array}{r} \text{T-ThTh H T O} \\ 2\ 0\ 8\ 1\ 5 \\ + 1\ 9\ 0\ 5\ 2 \\ \hline 3\ 9\ 8\ 6\ 7 \end{array}$$

$$(c) \begin{array}{r} \text{T-ThTh H T O} \\ 9\ 6\ 2\ 1\ 5 \\ + 2\ 4\ 4\ 3 \\ \hline 9\ 8\ 6\ 5\ 8 \end{array}$$

$$(d) \begin{array}{r} \text{T-ThTh H T O} \\ 8\ 0\ 1\ 3\ 2 \\ + 1\ 7\ 5\ 6\ 5 \\ \hline 9\ 7\ 6\ 9\ 7 \end{array}$$

$$(e) \begin{array}{r} \text{T-ThTh H T O} \\ 7\ 6\ 3\ 0\ 2 \\ + 1\ 2\ 3\ 5\ 4 \\ \hline 8\ 8\ 6\ 5\ 6 \end{array}$$

$$(f) \begin{array}{r} \text{T-ThTh H T O} \\ 4\ 3\ 2\ 1\ 0 \\ + 3\ 5\ 2\ 6\ 5 \\ \hline 7\ 8\ 4\ 7\ 5 \end{array}$$

2. Add :

$$(a) \begin{array}{r} \text{T-ThTh H T O} \\ \textcircled{1}\ \textcircled{1}\ \textcircled{1} \\ 3\ 4\ 2\ 9\ 8 \\ + 1\ 8\ 9\ 5\ 6 \\ \hline 5\ 3\ 2\ 5\ 4 \end{array}$$

$$(b) \begin{array}{r} \text{T-ThTh H T O} \\ \textcircled{1}\ \textcircled{1}\ \textcircled{1} \\ 5\ 0\ 6\ 3\ 2 \\ 1\ 4\ 5\ 0\ 4 \\ + 1\ 4\ 5\ 8\ 5 \\ \hline 7\ 9\ 7\ 2\ 1 \end{array}$$

$$(c) \begin{array}{r} \text{T-ThTh H T O} \\ \textcircled{1}\ \textcircled{1}\ \textcircled{1} \\ 2\ 0\ 4\ 3\ 2 \\ 1\ 5\ 8\ 4 \\ + 5\ 3\ 5\ 2\ 5 \\ \hline 7\ 5\ 5\ 4\ 1 \end{array}$$

$$(d) \begin{array}{r} \text{T-ThTh H T O} \\ \textcircled{2}\ \textcircled{1}\ \textcircled{1}\ \textcircled{1} \\ 4\ 9\ 1\ 3\ 6 \\ 5\ 1\ 8\ 2\ 5 \\ + 2\ 9\ 1\ 5\ 6 \\ \hline 1\ 3\ 0\ 1\ 1\ 7 \end{array}$$

$$(e) \begin{array}{r} \text{T-ThTh H T O} \\ \textcircled{1}\ \textcircled{1} \\ 8\ 0\ 8\ 3\ 2 \\ 5\ 6\ 3\ 5 \\ + 1\ 2\ 3\ 2\ 6 \\ \hline 9\ 8\ 7\ 9\ 3 \end{array}$$

$$(f) \begin{array}{r} \text{T-ThTh H T O} \\ \textcircled{1}\ \textcircled{1}\ \textcircled{1}\ \textcircled{1} \\ 1\ 7\ 2\ 3\ 2 \\ 1\ 8\ 5\ 5\ 5 \\ + 3\ 0\ 6\ 2\ 8 \\ \hline 6\ 6\ 4\ 1\ 5 \end{array}$$

3. Find the sum and regroup for the operation of addition :

(a) 1 thousand 4 hundred

(b) 13 thousand 6 hundred 2 tens

(c) 63 thousand 3 hundred 4 tens

(d) 36 thousand 2 hundred

(e) 79 thousand 4 hundred 3 tens

### Exercise 3.4

1. Males in town

$$= 25860$$

$$\begin{array}{r} \text{T-ThTh H T O} \\ 2\ 5\ 8\ 6\ 0 \end{array}$$

Females in town

$$= 28505$$

$$+ \begin{array}{r} 2\ 8\ 5\ 0\ 5 \end{array}$$

Total population in town

$$= 54365$$

$$\hline \begin{array}{r} 5\ 4\ 3\ 6\ 5 \end{array}$$

2. Earnings of Mr. Shukla last year

$$= 48230$$

$$\begin{array}{r} \text{T-ThTh H T O} \\ 4\ 8\ 2\ 3\ 0 \end{array}$$

Earnings of Mr. Shukla current year

$$= 64356$$

$$+ \begin{array}{r} 6\ 4\ 3\ 5\ 6 \end{array}$$

Total earnings of both year

$$= 112586$$

$$\hline \begin{array}{r} 1\ 1\ 2\ 5\ 8\ 6 \end{array}$$

		T-ThTh H T O
3. Rohan's Income in 2009 = 48,350		① ① ①
Exceed in Income = 3,42,685		4 8 3 5 0
Earnings of past two years = 3,91,035		+ 34 2 6 8 5
		39 1 0 3 5

		T-ThTh H T O
4. Difference between two number = 7250		7 2 5 0
Smaller number = 10655		+ 1 0 6 5 5
The greater number is 17905.		1 7 9 0 5

		T-ThTh H T O
5. Bags of rice = 21152		2 1 1 5 2
Bags of wheat = 12540		1 2 5 4 0
Bags of sugar = 8450		+ 8 4 5 0
Total number of bags in the godown = 42142		4 2 1 4 2

		T-ThTh H T O
6. Boys appeared for a competition = 46298		4 6 2 9 8
Girls appeared for a competition = 42580		+ 4 2 5 8 0
Total students appeared for the competition = 88878		8 8 8 7 8

		T-ThTh H T O
7. Valid votes in election = 58940		5 8 9 4 0
Votes rejected in election = 3854		3 8 5 4
Voters did not vote = 8493		+ 8 4 9 3
Total number of votes = 71287		7 1 2 8 7

### Exercise 3.5

Tick (✓) the correct answer :

1. (c) $\begin{array}{r} 5,20,000 \\ + 13,000 \\ \hline 5,33,000 \end{array}$	2. (d)
---	--------

3. (b) Cartons of orange juice = 85	①
Cartons of apple juice = 96	8 5
	+ 9 6
	1 8 1

4. (a)	T-ThTh H T O
	3 7 8 9 9
5. (b) Males in town = 37899	+ 3 5 9 6 7
Females in town = 35967	7 3 8 6 6

6. Difference between numbers = 8489	T-ThTh H T O
Smallest number = 12057	8 4 8 9
	+ 1 2 0 5 7
	2 0 5 4 6

## Chapter-4 (Subtraction of Numbers)

### Exercise 4.1

1. Subtract :

$$\begin{array}{r} \text{Th H T O} \\ \textcircled{4} \textcircled{13} \textcircled{7} \textcircled{13} \\ \cancel{5} \cancel{2} \cancel{8} \cancel{3} \\ - 2 \ 6 \ 4 \ 9 \\ \hline 2 \ 6 \ 3 \ 4 \end{array}$$

$$\begin{array}{r} \text{Th H T O} \\ \textcircled{8} \textcircled{15} \textcircled{12} \textcircled{11} \\ \cancel{9} \cancel{4} \cancel{3} \cancel{3} \\ - 7 \ 5 \ 6 \ 8 \\ \hline 1 \ 8 \ 6 \ 3 \end{array}$$

$$\begin{array}{r} \text{Th H T O} \\ \textcircled{9} \textcircled{9} \textcircled{10} \\ 8 \ \cancel{0} \ \cancel{0} \ \cancel{0} \\ - 7 \ 1 \ 3 \ 4 \\ \hline 8 \ 6 \ 6 \end{array}$$

$$\begin{array}{r} \text{Th H T O} \\ \textcircled{8} \textcircled{9} \textcircled{17} \textcircled{13} \\ \cancel{9} \ \cancel{0} \ \cancel{8} \ \cancel{4} \\ - 2 \ 5 \ 9 \ 9 \\ \hline 6 \ 4 \ 8 \ 5 \end{array}$$

$$\begin{array}{r} \text{Th H T O} \\ \textcircled{7} \textcircled{13} \textcircled{16} \\ \cancel{8} \ \cancel{4} \ \cancel{6} \ \cancel{3} \\ - 3 \ 9 \ 8 \ 2 \\ \hline 4 \ 4 \ 8 \ 1 \end{array}$$

$$\begin{array}{r} \text{Th H T O} \\ \textcircled{6} \textcircled{9} \textcircled{9} \textcircled{18} \\ \cancel{7} \ \cancel{0} \ \cancel{0} \ \cancel{8} \\ - 5 \ 1 \ 2 \ 9 \\ \hline 1 \ 8 \ 7 \ 9 \end{array}$$

2. Fill in the blanks :

$$(a) \ 3240 - 0 = \boxed{3240}$$

$$(b) \ 724 - \boxed{0} = 724$$

$$(c) \ 3150 - \boxed{3150} = 0$$

$$(d) \ 2090 - \boxed{0} = 2090$$

$$(e) \ 5463 - 2321 = \boxed{3142}$$

$$(f) \ 8998 - 2446 = \boxed{6552}$$

$$(g) \ 942 - 510 = \boxed{432}$$

$$(h) \ 682 - 0 = \boxed{682}$$

3. Total children in the school = 2469  
 Girls in the school = 1250  
 Total boys in the school = 1219

$$\begin{array}{r} \text{Th H T O} \\ 2 \ 4 \ 6 \ 9 \\ - 1 \ 2 \ 5 \ 0 \\ \hline 1 \ 2 \ 1 \ 9 \end{array}$$

4. Total people in village = 7860  
 People in village B = 4256  
 People in village A = 3604

$$\begin{array}{r} \text{Th H T O} \\ 7 \ 8 \ 6 \ 0 \\ - 4 \ 2 \ 5 \ 6 \\ \hline 3 \ 6 \ 0 \ 4 \end{array}$$

### Exercise 4.2

$$\begin{array}{r} \textcircled{5} \ \textcircled{14} \\ 5 \ 6 \ 4 \ 8 \ 2 \\ - 1 \ 4 \ 8 \ 1 \ 2 \\ \hline 4 \ 1 \ 6 \ 7 \ 0 \end{array}$$

1. Minuend  
Subtrahend  
Difference

$$\begin{array}{r} 9 \ 8 \ 8 \ 9 \ 6 \\ - 6 \ 8 \ 7 \ 5 \ 4 \\ \hline 3 \ 0 \ 1 \ 4 \ 2 \end{array}$$

2. Minuend  
Subtrahend  
Difference

3. Regroup :

$$(a) \ 4 \text{ tens} + 6 \text{ ones} = 3 \text{ tens} + 16 \text{ ones}$$

$$(b) \ 8 \text{ hundreds} + 3 \text{ tens} = 7 \text{ hundreds} + 13 \text{ tens}$$

$$(c) \ 7 \text{ thousands} + 5 \text{ hundreds} = 6 \text{ thousands} + 10944 \text{ hundreds}$$

$$(d) \ 6 \text{ ten thousands} + 4 \text{ thousands} = 5 \text{ ten thousands} + 14 \text{ thousands}$$

$$(e) \ 9 \text{ thousands} + 6 \text{ tens} = 8 \text{ thousands} + 10 \text{ hundreds} + 6 \text{ tens}$$

4. Subtract :

$$\begin{array}{r} \text{(a)} \quad 87692 \\ - 23504 \\ \hline 64188 \end{array}$$

$$\begin{array}{r} \text{(b)} \quad 60305 \\ - 49546 \\ \hline 10759 \end{array}$$

$$\begin{array}{r} \text{(c)} \quad 70000 \\ - 54329 \\ \hline 15671 \end{array}$$

$$\begin{array}{r} \text{(d)} \quad 46801 \\ - 28987 \\ \hline 17814 \end{array}$$

$$\begin{array}{r} \text{(e)} \quad 80000 \\ - 32548 \\ \hline 47452 \end{array}$$

$$\begin{array}{r} \text{(f)} \quad 71264 \\ - 27892 \\ \hline 43372 \end{array}$$

$$\begin{array}{r} \text{(g)} \quad 54397 \\ - 21563 \\ \hline 32834 \end{array}$$

$$\begin{array}{r} \text{(h)} \quad 97813 \\ - 26789 \\ \hline 71024 \end{array}$$

$$\begin{array}{r} \text{(i)} \quad 20001 \\ - 14325 \\ \hline 5676 \end{array}$$

$$\begin{array}{r} \text{(j)} \quad 53806 \\ - 28792 \\ \hline 25014 \end{array}$$

$$\begin{array}{r} \text{(k)} \quad 48906 \\ - 29789 \\ \hline 19117 \end{array}$$

$$\begin{array}{r} \text{(l)} \quad 80000 \\ - 53258 \\ \hline 26742 \end{array}$$

5. Arrange in columns and subtract :

$$\begin{array}{r} \text{(a)} \quad \begin{array}{cccc} \text{T-Th} & \text{Th} & \text{H} & \text{T} & \text{O} \\ 3 & 8 & 7 & 0 & 4 \\ - 2 & 9 & 8 & 2 & 7 \\ \hline 8 & 8 & 7 & 7 & \end{array} \end{array}$$

$$\begin{array}{r} \text{(b)} \quad \begin{array}{cccc} \text{T-Th} & \text{Th} & \text{H} & \text{T} & \text{O} \\ 8 & 0 & 7 & 1 & 6 \\ - 6 & 7 & 9 & 4 & 0 \\ \hline 1 & 2 & 7 & 7 & 6 \end{array} \end{array}$$

$$\begin{array}{r} \text{(c)} \quad \begin{array}{cccc} \text{T-Th} & \text{Th} & \text{H} & \text{T} & \text{O} \\ 5 & 3 & 9 & 2 & 1 \\ - 2 & 8 & 7 & 6 & 3 \\ \hline 2 & 5 & 1 & 5 & 8 \end{array} \end{array}$$

$$\begin{array}{r} \text{(d)} \quad \begin{array}{cccc} \text{T-Th} & \text{Th} & \text{H} & \text{T} & \text{O} \\ 6 & 5 & 9 & 0 & 2 \\ - 2 & 4 & 5 & 0 & 4 \\ \hline 4 & 1 & 3 & 9 & 8 \end{array} \end{array}$$

6. Fill in the missing digits :

$$\begin{array}{r} \text{(a)} \quad \begin{array}{r} 7 \ 2 \ 4 \ 6 \ 8 \\ - \boxed{6} \ \boxed{4} \ \boxed{3} \ \boxed{8} \ \boxed{2} \\ \hline 8 \ 0 \ 8 \ 6 \end{array} \end{array}$$

$$\begin{array}{r} \text{(b)} \quad \begin{array}{r} 2 \ 8 \ 5 \ 6 \ 0 \\ - \boxed{1} \ \boxed{0} \ \boxed{8} \ \boxed{9} \ \boxed{3} \\ \hline 1 \ 7 \ 6 \ 6 \ 7 \end{array} \end{array}$$

$$\begin{array}{r} \text{(c)} \quad \begin{array}{r} 8 \ 6 \ 5 \ 7 \ 2 \\ - \boxed{5} \ \boxed{2} \ \boxed{3} \ \boxed{2} \ \boxed{1} \\ \hline 3 \ 4 \ 2 \ 5 \ 1 \end{array} \end{array}$$

**Exercise 4.3**

1. No. of TV sets in factory = 49,900  
 TV sets made in December = 5432  
 TV sets made in November = 44478

$$\begin{array}{r} \text{T-Th} & \text{Th} & \text{H} & \text{T} & \text{O} \\ 4 & 9 & 9 & 0 & 0 \\ - 5 & 4 & 3 & 2 & \\ \hline 4 & 4 & 4 & 6 & 8 \end{array}$$

2. Total population in town = 6,00,000  
 Increase in population = 13892  
 Current population = 586108

$$\begin{array}{r} \text{T-Th} & \text{Th} & \text{H} & \text{T} & \text{O} \\ 60 & 0 & 0 & 0 & 0 \\ - 1 & 3 & 8 & 9 & 2 \\ \hline 58 & 6 & 1 & 0 & 8 \end{array}$$

3. 
$$\begin{array}{r} \text{T-Th} & \text{Th} & \text{H} & \text{T} & \text{O} \\ \textcircled{5} & \textcircled{9} & \textcircled{11} & \textcircled{11} & \textcircled{10} \\ 6 & 0 & 2 & 2 & 0 \\ - 4 & 6 & 3 & 5 & 1 \\ \hline 1 & 3 & 8 & 6 & 9 \end{array}$$

4. 
$$\begin{array}{r} \text{T-Th} & \text{Th} & \text{H} & \text{T} & \text{O} \\ \textcircled{4} & \textcircled{12} & & & \\ 9 & 8 & 2 & 6 & 7 \\ - 1 & 2 & 3 & 4 & 0 \\ \hline 8 & 2 & 9 & 2 & 7 \end{array}$$

5. Sum of the two numbers = 80591  
 One number = 42329  
 Another number = 38262

$$\begin{array}{r}
 \text{T-ThTh H T O} \\
 80591 \\
 - 42329 \\
 \hline
 38262
 \end{array}$$

6. Total money in bank account = ₹35,250  
 Money withdrawn = ₹15840  
 Money left in bank account = ₹19410

$$\begin{array}{r}
 \text{T-ThTh H T O} \\
 35250 \\
 - 15840 \\
 \hline
 19410
 \end{array}$$

7. Difference between two numbers = ₹14937  
 Greater of the two numbers = ₹590002  
 Sum of two the numbers = ₹44065

$$\begin{array}{r}
 \text{T-ThTh H T O} \\
 \textcircled{8} \textcircled{9} \textcircled{9} \textcircled{12} \\
 5\cancel{0}\cancel{0}\cancel{0}\cancel{2} \\
 - 14937 \\
 \hline
 44065
 \end{array}$$

8. 
$$\begin{array}{r}
 \text{T-ThTh H T O} \\
 \textcircled{6} \textcircled{10} \textcircled{5} \textcircled{14} \\
 \text{Sum} = 1\cancel{7}\cancel{0}9\cancel{6}4 \\
 \text{Diff} = -14528 \\
 \hline
 156436
 \end{array}$$

### Exercise 4.4

Tick (✓) the correct answer :

1. (c)      3 2 7 8 1 9      2. (d)

$$\begin{array}{r}
 327819 \\
 - 210000 \\
 \hline
 117819
 \end{array}$$

3. (d)      44660 / /      4. (c)       $\textcircled{0} \textcircled{9} \textcircled{9} \textcircled{9} \textcircled{9} \textcircled{10}$   
 $\begin{array}{r} 44660 \\ - 48 \\ \hline 44612 \end{array}$        $\begin{array}{r} \cancel{X}0000\cancel{0} / / \\ - 89234 \\ \hline 10766 \end{array}$

5. (b)       $\textcircled{8} \textcircled{18} \textcircled{6} \textcircled{11} \textcircled{10}$   
 $\begin{array}{r} \cancel{0}8720 / / \\ - 89293 \\ \hline 09427 \end{array}$

6. (a) Boys in school = 3000      Th H T O  
 Girls in school = 1275       $\begin{array}{r} 3000 \\ - 1275 \\ \hline 1725 \end{array}$   
 There are 1725 more boys than girl.

### Test Paper-I

1. Write the Hindi-Arabic numerals for the following:

- (a) VI = Six      (b) XLVI = Forty six      (c) L = Fifty  
 (d) XCI = Ninety one      (e) XII = Twelve      (f) XVI = Sixteen

2. Write the Roman numerals for the following :

- (a) 8 = VIII      (b) 23 = XXIII      (c) 32 = XXXII  
 (d) 48 = XLVIII      (e) 69 = LXIX      (f) 75 = LXXV

3. Write the expanded form of the following numerals:
- (a)  $49236 = 40000 + 9000 + 200 + 30 + 6$   
 (b)  $52,49,108 = 5000000 + 200000 + 40000 + 9000 + 100 + 8$   
 (c)  $1,50,891 = 100000 + 50000 + 800 + 90 + 1$   
 (d)  $36,18,911 = 3000000 + 600000 + 10000 + 8000 + 900 + 10 + 1$

4. Add :

$$\begin{array}{r} \text{T-ThTh H T O} \\ 3 \ 2 \ 1 \ 8 \ 0 \\ + 5 \ 2 \ 3 \ 1 \ 5 \\ \hline 8 \ 4 \ 4 \ 9 \ 5 \end{array}$$

$$\begin{array}{r} \text{T-ThTh H T O} \\ \textcircled{1} \ \textcircled{1} \ \textcircled{1} \ \textcircled{1} \ \textcircled{1} \\ 3 \ 2 \ 6 \ 8 \ 1 \\ + 2 \ 7 \ 5 \ 7 \ 9 \\ \hline 6 \ 0 \ 2 \ 6 \ 0 \end{array}$$

$$\begin{array}{r} \text{T-ThTh H T O} \\ \textcircled{1} \ \textcircled{1} \ \textcircled{1} \ \textcircled{1} \\ 6 \ 8 \ 5 \ 1 \ 8 \\ + 1 \ 6 \ 5 \ 9 \ 6 \\ \hline 8 \ 5 \ 1 \ 1 \ 4 \end{array}$$

5. Subtract :

$$\begin{array}{r} 9 \ 3 \ 8 \ 5 \ 1 \\ - 7 \ 1 \ 5 \ 3 \ 0 \\ \hline 2 \ 2 \ 3 \ 2 \ 1 \end{array}$$

$$\begin{array}{r} \textcircled{8} \ \textcircled{9} \ \textcircled{9} \ \textcircled{9} \ \textcircled{10} \\ \cancel{9} \ 0 \ 0 \ 0 \ / \ / \\ - 5 \ 1 \ 2 \ 8 \ 9 \\ \hline 3 \ 8 \ 7 \ 1 \ 1 \end{array}$$

$$\begin{array}{r} \textcircled{4} \ \textcircled{9} \ \textcircled{9} \ \textcircled{9} \ \textcircled{12} \\ \cancel{5} \ 0 \ 0 \ 0 \ 2 \ / \ / \\ - 3 \ 1 \ 3 \ 2 \ 5 \\ \hline 1 \ 8 \ 6 \ 7 \ 7 \end{array}$$

6. Fill in the blanks :

(a) L, D

(b) 6, 28, 108

7. Tick (✓) the correct answer :

(a) (iii) VV

(b) (i) >

(c) (iii) 823861

(d) (ii) 9427

## Chapter-5 (Multiplication)

### Exercise 5.1

1. Fill in the blanks :

(a)  $\boxed{8} \times 6 = 48$

(b)  $2 \times \boxed{5} \times \boxed{6} = 5 \times 6 \times 2$

(c)  $5 \times \boxed{9} = 45$

(d)  $7 \times 4 \times \boxed{3} = 3 \times \boxed{7} \times \boxed{4}$

(e)  $\boxed{1} \times 91 = 91$

(f)  $5 \times \boxed{6} = 6 \times \boxed{5}$

(g)  $10 \times \boxed{10} = 100$

(h)  $9 \times 10 = \boxed{90}$

(i)  $9 \times 7 = \boxed{63}$

(j)  $10 \times 10 = \boxed{100}$

2. Multiply :

$$\begin{array}{r} \text{Th H T O} \\ \textcircled{2} \ \textcircled{3} \\ 3 \ 6 \ 8 \\ \times 4 \\ \hline 1 \ 4 \ 7 \ 2 \end{array}$$

$$\begin{array}{r} \text{Th H T O} \\ \textcircled{3} \ \textcircled{2} \\ 5 \ 4 \ 3 \\ \times 9 \\ \hline 4 \ 8 \ 8 \ 7 \end{array}$$

$$\begin{array}{r} \text{Th H T O} \\ \textcircled{3} \ \textcircled{6} \\ 8 \ 4 \ 8 \\ \times 8 \\ \hline 6 \ 7 \ 8 \ 4 \end{array}$$

3. Write the product using multiplication tables:

(a)  $12 \times 6 = \boxed{72}$

(b)  $50 \times 7 = \boxed{350}$

(c)  $11 \times 5 = \boxed{55}$

(d)  $13 \times 24 = \boxed{312}$

(e)  $20 \times 30 = \boxed{600}$

(f)  $20 \times 10 = \boxed{200}$

(g)  $40 \times 8 = \boxed{320}$

(h)  $15 \times 7 = \boxed{105}$

(i)  $18 \times 6 = \boxed{108}$

(j)  $18 \times 8 = \boxed{144}$

$$\begin{array}{r}
 250 \\
 \times 20 \\
 \hline
 000 \\
 500 \times \\
 \hline
 5000
 \end{array}$$

$$\begin{array}{r}
 528 \\
 \times 8 \\
 \hline
 4224
 \end{array}$$

### Exercise 5.2

1. Fill in the blanks :

(a)  $35 \times 60 = \boxed{60} \times 35$

(b)  $2160 \times \boxed{0} = 0$

(c)  $444 \times 333 = 333 \times \boxed{444}$

(d)  $1 \times 912 = \boxed{912}$

(e)  $2842 \times 0 = \boxed{0}$

(f)  $5040 \times \boxed{1096} = 1096 \times 5040$

(g)  $5096 \times 1 = \boxed{5096}$

(h)  $\boxed{10} \times \boxed{50} \times 40 = \boxed{40} \times 10 \times 50$

(i)  $20 \times 30 \times 40 = \boxed{20} \times \boxed{30} \times 40$

2. Multiply :

(a)  $2046 \times 10 = \boxed{20460}$

(b)  $880 \times 100 = \boxed{88000}$

(c)  $72 \times 100 = \boxed{7200}$

(d)  $100 \times 30 = \boxed{3000}$

(e)  $34 \times 60 = \boxed{2040}$

(f)  $1000 \times 0 = \boxed{0}$

(g)  $216 \times 700 = \boxed{151200}$

(h)  $320 \times 110 = \boxed{35200}$

(i)  $120 \times 600 = \boxed{72000}$

(j)  $980 \times 100 = \boxed{98000}$

(k)  $2000 \times 12 = \boxed{24000}$

(l)  $126 \times 1000 = \boxed{126000}$

$$\begin{array}{r}
 700 \\
 \times 60 \\
 \hline
 000 \\
 4200 \times \\
 \hline
 42000
 \end{array}$$

$$\begin{array}{r}
 500 \\
 \times 32 \\
 \hline
 1000 \\
 1500 \times \\
 \hline
 16000
 \end{array}$$

### Exercise 5.3

1. Multiply :

(a)  $2054 \times 3 = \underline{6162}$

(b)  $3708 \times 2 = \underline{7416}$

(c)  $7917 \times 3 = \underline{23751}$

(d)  $5058 \times 2 = \underline{10116}$

(e)  $7839 \times 5 = \underline{39195}$

(f)  $7080 \times 5 = \underline{35400}$

(g)  $9496 \times 4 = \underline{37984}$

(h)  $8300 \times 7 = \underline{58100}$

(i)  $8400 \times 6 = \underline{50400}$

(j)  $6080 \times 6 = \underline{36480}$

(k)  $8445 \times 3 = \underline{25335}$

(l)  $4350 \times 7 = \underline{30450}$

$(m) 7436 \times 8 = \underline{59488}$

$(o) 5162 \times 8 = \underline{41296}$

$(q) 6054 \times 8 = \underline{48432}$

$(s) 1435 \times 4 = \underline{5740}$

$(u) 9400 \times 9 = \underline{84600}$

$(n) 2411 \times 5 = \underline{12055}$

$(p) 2080 \times 7 = \underline{14560}$

$(r) 3792 \times 4 = \underline{15168}$

$(t) 2468 \times 2 = \underline{4936}$

2. Multiply :

$(a) 2231 \times 32 = \underline{71392}$

$(c) 7685 \times 50 = \underline{384250}$

$(e) 2496 \times 25 = \underline{62400}$

$(g) 8423 \times 19 = \underline{160037}$

$(i) 3045 \times 91 = \underline{277095}$

$(k) 3659 \times 28 = \underline{102452}$

$(m) 158 \times 23 = \underline{3634}$

$(o) 1474 \times 43 = \underline{63382}$

$(q) 8260 \times 52 = \underline{429520}$

$(s) 3047 \times 26 = \underline{79222}$

$(u) 2318 \times 19 = \underline{44042}$

$(b) 624 \times 12 = \underline{7488}$

$(d) 1986 \times 83 = \underline{164838}$

$(f) 328 \times 36 = \underline{11808}$

$(h) 2479 \times 12 = \underline{29748}$

$(j) 123 \times 42 = \underline{5166}$

$(l) 6145 \times 32 = \underline{196640}$

$(n) 5714 \times 31 = \underline{177134}$

$(p) 2168 \times 42 = \underline{91056}$

$(r) 6821 \times 50 = \underline{341050}$

$(t) 3045 \times 40 = \underline{121800}$

3. Multiply :

$(a) 108 \times 126 = \underline{13608}$

$(c) 143 \times 102 = \underline{14586}$

$(e) 408 \times 119 = \underline{48552}$

$(g) 325 \times 240 = \underline{78000}$

$(i) 163 \times 242 = \underline{39446}$

$(k) 701 \times 204 = \underline{143004}$

$(m) 254 \times 205 = \underline{52070}$

$(o) 486 \times 301 = \underline{146286}$

$(q) 132 \times 450 = \underline{59400}$

$(s) 132 \times 230 = \underline{30360}$

$(u) 864 \times 112 = \underline{96768}$

$(b) 125 \times 340 = \underline{42500}$

$(d) 143 \times 116 = \underline{16588}$

$(f) 108 \times 902 = \underline{97416}$

$(h) 346 \times 463 = \underline{160198}$

$(j) 708 \times 109 = \underline{77172}$

$(l) 456 \times 802 = \underline{365712}$

$(n) 286 \times 108 = \underline{30888}$

$(p) 704 \times 124 = \underline{87296}$

$(r) 259 \times 163 = \underline{42217}$

$(t) 702 \times 112 = \underline{78624}$

### Exercise 5.4

1. Aeroplanes depart from airport each day = 28

Aeroplanes depart from airport in 365 days =  $365 \times 28$   
= 10220

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

2. Tyres produced in a day = 2469

Tyres produced in 3 days =  $2469 \times 3$   
= 7407

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

3. Pencils in 1 gross = 144

Pencils in 35 gross =  $144 \times 35$   
= 5040

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

4. No. of rows in stadium = 328  
 Seats in each row = 250  
 Total number of seats =  $328 \times 250$   
 = 82000
- $$\begin{array}{r} \text{Th H T O} \\ 328 \\ \times 250 \\ \hline 000 \\ 1640 \times \\ + 656 \times \\ \hline 82000 \end{array}$$
5. Total schools = 324  
 Children from each school = 152  
 Total children = 49248
- $$\begin{array}{r} \text{Th H T O} \\ 324 \\ \times 152 \\ \hline \textcircled{1}648 \\ 16200 \\ + 32400 \\ \hline 49248 \end{array}$$
6. Total trees in garden = 56  
 Mango each tree give = 152  
 Total mangoes =  $152 \times 56$   
 = 8512
- $$\begin{array}{r} \text{Th H T O} \\ 56 \\ \times 152 \\ \hline \textcircled{1}912 \\ + 7600 \\ \hline 8512 \end{array}$$

### Exercise 5.5

Tick (✓) the correct answer :

1. (b)

2. (c)

$$\begin{array}{r} 5000 \\ \times 160 \\ \hline 0000 \\ 300000 \\ + 500000 \\ \hline 800000 \end{array}$$

4. (b)

5. (a)

$$\begin{array}{r} 569 \\ \times 48 \\ \hline 27312 \end{array}$$

6. (d) Cost of 1 ticket = 29  
 Cost of 456 tickets =  $456 \times 29$   
 Total many collected = 13224

3. (a)

$$\begin{array}{r} \textcircled{6} \textcircled{5} \textcircled{6} \\ 5769 \\ \times 8 \\ \hline 46152 \end{array}$$

$$\begin{array}{r} \text{T-Th Th H T O} \\ 456 \\ \times 29 \\ \hline 4104 \\ + 9120 \\ \hline 13224 \end{array}$$

## Chapter-6 (Division)

### Exercise 6.1

1. Fill in the blanks :

- (a)  $2469 \div 1 = 2469$   
 (c)  $1000 \div 10 = 100$   
 (e)  $5600 \div 70 = 80$   
 (g)  $3624 \div 12 = 302$   
 (i)  $7200 \div 900 = 8$

- (b)  $0 \div 1020 = 0$   
 (d)  $548 \div 548 = 1$   
 (f)  $6000 \div 3000 = 2$   
 (h)  $2400 \div 12 = 200$   
 (j)  $2000 \div 20 = 100$

2. Divide :

$$(a) \begin{array}{r} 7 \overline{) 644} \text{ (92)} \\ \underline{63} \phantom{0} \\ 14 \\ \underline{-14} \\ 0 \end{array}$$

$$(b) \begin{array}{r} 3 \overline{) 6096} \text{ (2032)} \\ \underline{60} \phantom{9} \phantom{0} \\ 09 \\ \underline{-9} \phantom{0} \\ 06 \\ \underline{-6} \\ 0 \end{array}$$

$$(c) \begin{array}{r} 13 \overline{) 5200} \text{ (400)} \\ \underline{52} \phantom{0} \phantom{0} \\ 000 \\ \underline{-000} \\ 0 \end{array}$$

3. Divide :

$$(a) \begin{array}{r} 10 \overline{) 1340} \text{ (134)} \\ \underline{10} \phantom{0} \phantom{0} \\ 34 \\ \underline{-30} \phantom{0} \\ 40 \\ \underline{-40} \\ 0 \end{array}$$

$$Q = 134, R = 0$$

$$(b) \begin{array}{r} 100 \overline{) 8490} \text{ (84)} \\ \underline{-800} \phantom{0} \\ 490 \\ \underline{-400} \phantom{0} \\ 90 \end{array}$$

$$Q = 84, R = 90$$

$$(c) \begin{array}{r} 7 \overline{) 8059} \text{ (1151)} \\ \underline{70} \phantom{0} \phantom{0} \phantom{0} \\ 10 \phantom{0} \phantom{0} \\ \underline{-7} \phantom{0} \phantom{0} \\ 35 \\ \underline{-35} \phantom{0} \\ 09 \\ \underline{-07} \\ 2 \end{array}$$

$$Q = 1151, R = 2$$

$$(d) \begin{array}{r} 10 \overline{) 7463} \text{ (746)} \\ \underline{70} \phantom{0} \phantom{0} \\ 46 \\ \underline{-40} \phantom{0} \\ 63 \\ \underline{-60} \phantom{0} \\ 3 \end{array}$$

$$Q = 746, R = 3$$

$$(e) \begin{array}{r} 10 \overline{) 1934} \text{ (193)} \\ \underline{10} \phantom{0} \phantom{0} \\ 93 \\ \underline{-90} \phantom{0} \\ 34 \\ \underline{-30} \phantom{0} \\ 4 \end{array}$$

$$Q = 193, R = 4$$

$$(f) \begin{array}{r} 100 \overline{) 9286} \text{ (92)} \\ \underline{900} \phantom{0} \\ 286 \\ \underline{-200} \phantom{0} \\ 86 \end{array}$$

$$Q = 92, R = 86$$

4. Total pages = 700  
 Pages read each day = 10  
 Time taken to read book =  $700 \div 10$   
 = 70 days

$$\begin{array}{r} 10 \overline{) 700} \text{ (70)} \\ \underline{70} \\ 0 \end{array}$$

5. Total students = 837  
 No. of classes = 9  
 No. of students in each class =  $837 \div 9$   
 = 93

$$\begin{array}{r} 9 \overline{) 837} \text{ (93)} \\ \underline{81} \phantom{0} \\ 27 \\ \underline{-27} \\ 0 \end{array}$$

### Exercise 6.2

1. Fill in the blanks :

$$(a) 2092 \div 2092 = \boxed{1}$$

$$(b) 3476 \div 1 = \boxed{3476}$$

$$(c) 0 \div 1093 = \boxed{0}$$

$$(d) 0 \div 2190 = \boxed{0}$$

$$(e) 2098 \div 2098 = \boxed{1}$$

$$(f) 0 \div 43109 = \boxed{0}$$

$$(g) 1568 \div 1 = \boxed{1568}$$

$$(h) 9000 \div 9000 = \boxed{1}$$

$$(i) 0 \div 25698 = \boxed{0}$$

$$(j) 24689 \div 1 = \boxed{24689}$$

2. Divide :

(a)  $40,000 \div 10 = \boxed{4000}$

(b)  $65000 \div 13000 = \boxed{5}$

(c)  $6600 \div 10 = \boxed{660}$

(d)  $60000 \div 120 = \boxed{500}$

(e)  $45000 \div 5000 = \boxed{9}$

(f)  $28000 \div 700 = \boxed{40}$

(g)  $81000 \div 900 = \boxed{90}$

(h)  $800 \div 10 = \boxed{80}$

(i)  $5600 \div 80 = \boxed{70}$

(j)  $3600 \div 600 = \boxed{6}$

3. Divide using short method :

(a)  $Q = 251$

(b)  $Q = 36$

(c)  $Q = 14$

(d)  $Q = 406$

$R = 3$

$R = 0$

$R = 38$

$R = 00$

(e)  $Q = 96$

(f)  $Q = 30$

(g)  $Q = 23$

(h)  $Q = 7394$

$R = 312$

$R = 742$

$R = 40$

$R = 3$

### Exercise 6.3

1. Divide :

(a) 
$$\begin{array}{r} 8 \overline{) 12245} \quad (153 \\ \underline{-8} \downarrow \quad \downarrow \downarrow \\ 42 \quad \downarrow \downarrow \\ \underline{-40} \downarrow \\ 24 \quad \downarrow \\ \underline{-24} \downarrow \\ 5 \end{array}$$

(b) 
$$\begin{array}{r} 7 \overline{) 8397} \quad (1199 \\ \underline{-7} \downarrow \quad \downarrow \downarrow \\ 13 \quad \downarrow \downarrow \\ \underline{-7} \downarrow \\ 69 \quad \downarrow \\ \underline{-63} \downarrow \\ 67 \quad \downarrow \\ \underline{-63} \downarrow \\ 4 \end{array}$$

(c) 
$$\begin{array}{r} 3 \overline{) 2964} \quad (988 \\ \underline{-27} \downarrow \quad \downarrow \downarrow \\ 26 \quad \downarrow \downarrow \\ \underline{-24} \downarrow \\ 24 \quad \downarrow \\ \underline{-24} \downarrow \\ 0 \end{array}$$

(d) 
$$\begin{array}{r} 4 \overline{) 8615} \quad (2153 \\ \underline{-8} \downarrow \quad \downarrow \downarrow \\ 06 \quad \downarrow \downarrow \\ \underline{-4} \downarrow \\ 21 \quad \downarrow \\ \underline{-20} \downarrow \\ 15 \quad \downarrow \\ \underline{-12} \downarrow \\ 3 \end{array}$$

(e) 
$$\begin{array}{r} 6 \overline{) 7392} \quad (1232 \\ \underline{-6} \downarrow \quad \downarrow \downarrow \\ 13 \quad \downarrow \downarrow \\ \underline{-12} \downarrow \\ 19 \quad \downarrow \\ \underline{-18} \downarrow \\ 12 \quad \downarrow \\ \underline{-12} \downarrow \\ 0 \end{array}$$

(f) 
$$\begin{array}{r} 5 \overline{) 79041} \quad (1588 \\ \underline{-5} \downarrow \quad \downarrow \downarrow \\ 29 \quad \downarrow \downarrow \\ \underline{-25} \downarrow \\ 40 \quad \downarrow \\ \underline{-40} \downarrow \\ 041 \quad \downarrow \\ \underline{-40} \downarrow \\ 1 \end{array}$$

(g) 
$$\begin{array}{r} 3 \overline{) 32840} \quad (1946 \\ \underline{-3} \downarrow \downarrow \quad \downarrow \downarrow \\ 028 \quad \downarrow \downarrow \\ \underline{-27} \downarrow \\ 14 \quad \downarrow \\ \underline{-12} \downarrow \\ 20 \quad \downarrow \\ \underline{-18} \downarrow \\ 2 \end{array}$$

(h) 
$$\begin{array}{r} 8 \overline{) 6530} \quad (816 \\ \underline{-64} \downarrow \quad \downarrow \downarrow \\ 13 \quad \downarrow \downarrow \\ \underline{-8} \downarrow \\ 50 \quad \downarrow \\ \underline{-48} \downarrow \\ 2 \end{array}$$

(i) 
$$\begin{array}{r} 4 \overline{) 9450} \quad (2362 \\ \underline{-8} \downarrow \quad \downarrow \downarrow \\ 14 \quad \downarrow \downarrow \\ \underline{-12} \downarrow \\ 25 \quad \downarrow \\ \underline{-24} \downarrow \\ 10 \quad \downarrow \\ \underline{-8} \downarrow \\ 2 \end{array}$$

$$\begin{array}{r}
 \text{(j) } 5 \overline{) 23762} \text{ (4752)} \\
 \underline{-20} \downarrow \\
 37 \downarrow \\
 \underline{-35} \downarrow \\
 26 \downarrow \\
 \underline{-25} \downarrow \\
 12 \downarrow \\
 \underline{-10} \downarrow \\
 2
 \end{array}
 \quad
 \begin{array}{r}
 \text{(k) } 3 \overline{) 7973} \text{ (2657)} \\
 \underline{-6} \downarrow \\
 19 \downarrow \\
 \underline{-18} \downarrow \\
 17 \downarrow \\
 \underline{-15} \downarrow \\
 23 \downarrow \\
 \underline{-21} \downarrow \\
 2
 \end{array}
 \quad
 \begin{array}{r}
 \text{(l) } 6 \overline{) 75009} \text{ (12501)} \\
 \underline{-6} \downarrow \\
 15 \downarrow \\
 \underline{-12} \downarrow \\
 30 \downarrow \\
 \underline{-30} \downarrow \\
 009 \downarrow \\
 \underline{-6} \downarrow \\
 3
 \end{array}$$

$$\begin{array}{r}
 \text{(m) } 4 \overline{) 51679} \text{ (12919)} \\
 \underline{-4} \downarrow \\
 11 \downarrow \\
 \underline{-8} \downarrow \\
 36 \downarrow \\
 \underline{-36} \downarrow \\
 07 \downarrow \\
 \underline{-4} \downarrow \\
 39 \downarrow \\
 \underline{-36} \downarrow \\
 3
 \end{array}
 \quad
 \begin{array}{r}
 \text{(n) } 7 \overline{) 34179} \text{ (4882)} \\
 \underline{-28} \downarrow \\
 61 \downarrow \\
 \underline{-56} \downarrow \\
 057 \downarrow \\
 \underline{-56} \downarrow \\
 19 \downarrow \\
 \underline{-14} \downarrow \\
 5
 \end{array}
 \quad
 \begin{array}{r}
 \text{(o) } 6 \overline{) 28341} \text{ (4723)} \\
 \underline{-24} \downarrow \\
 43 \downarrow \\
 \underline{-42} \downarrow \\
 14 \downarrow \\
 \underline{-12} \downarrow \\
 21 \downarrow \\
 \underline{-18} \downarrow \\
 3
 \end{array}$$

### Exercise 6.4

1. Divide :

$$\begin{array}{r}
 \text{(a) } 77 \overline{) 9898} \text{ (128)} \\
 \underline{-77} \downarrow \\
 219 \downarrow \\
 \underline{-154} \downarrow \\
 658 \downarrow \\
 \underline{-616} \downarrow \\
 42
 \end{array}
 \quad
 \begin{array}{r}
 \text{(b) } 29 \overline{) 8648} \text{ (298)} \\
 \underline{-58} \downarrow \\
 284 \downarrow \\
 \underline{-261} \downarrow \\
 238 \downarrow \\
 \underline{-232} \downarrow \\
 6
 \end{array}
 \quad
 \begin{array}{r}
 \text{(c) } 18 \overline{) 2054} \text{ (114)} \\
 \underline{-18} \downarrow \\
 25 \downarrow \\
 \underline{-18} \downarrow \\
 74 \downarrow \\
 \underline{-72} \downarrow \\
 2
 \end{array}$$

Q = 128, R = 42

Q = 298, R = 6

Q = 114, R = 2

$$\begin{array}{r}
 \text{(d) } 35 \overline{) 7565} \text{ (216)} \\
 \underline{-70} \downarrow \\
 56 \downarrow \\
 \underline{-35} \downarrow \\
 215 \downarrow \\
 \underline{-210} \downarrow \\
 5
 \end{array}
 \quad
 \begin{array}{r}
 \text{(e) } 23 \overline{) 7280} \text{ (316)} \\
 \underline{-69} \downarrow \\
 38 \downarrow \\
 \underline{-23} \downarrow \\
 150 \downarrow \\
 \underline{-138} \downarrow \\
 12
 \end{array}
 \quad
 \begin{array}{r}
 \text{(f) } 64 \overline{) 92054} \text{ (1438)} \\
 \underline{-64} \downarrow \\
 280 \downarrow \\
 \underline{-256} \downarrow \\
 245 \downarrow \\
 \underline{-192} \downarrow \\
 534 \downarrow \\
 \underline{-512} \downarrow \\
 22
 \end{array}$$

Q = 216, R = 5

Q = 316, R = 12

Q = 1438, R = 22

$$\begin{array}{r}
 19 \overline{) 86009} \text{ (4526)} \\
 \underline{-76 \downarrow} \phantom{0} \\
 100 \phantom{0} \\
 \underline{-95 \downarrow} \\
 50 \phantom{0} \\
 \underline{-38 \downarrow} \\
 129 \\
 \underline{-114 \downarrow} \\
 15
 \end{array}$$

$$Q = 4526, R = 15$$

$$\begin{array}{r}
 24 \overline{) 7000} \text{ (291)} \\
 \underline{-48 \downarrow} \phantom{0} \\
 220 \phantom{0} \\
 \underline{-216 \downarrow} \\
 40 \\
 \underline{-24 \downarrow} \\
 16
 \end{array}$$

$$Q = 291, R = 16$$

$$\begin{array}{r}
 63 \overline{) 8769} \text{ (139)} \\
 \underline{-63 \downarrow} \phantom{0} \\
 246 \phantom{0} \\
 \underline{-189 \downarrow} \\
 579 \\
 \underline{-567 \downarrow} \\
 12
 \end{array}$$

$$Q = 139, R = 12$$

$$\begin{array}{r}
 28 \overline{) 30983} \text{ (1106)} \\
 \underline{-28 \downarrow} \phantom{0} \\
 29 \phantom{0} \\
 \underline{-28 \downarrow} \\
 183 \\
 \underline{-168 \downarrow} \\
 15
 \end{array}$$

$$Q = 1106, R = 15$$

### Exercise 6.5

1. Children went to picnic = 975  
 Children in one bus = 25  
 No. of buses =  $975 \div 25$   
 = 225

$$\begin{array}{r}
 25 \overline{) 975} \text{ (39)} \\
 \underline{-75 \downarrow} \\
 225 \\
 \underline{-225 \downarrow} \\
 0
 \end{array}$$

2. Total length of ribbon = 500 cm  
 No. of ribbons of 30 cm =  $(500 \div 30)$  cm  
 = 16

$$\begin{array}{r}
 30 \overline{) 500} \text{ (16)} \\
 \underline{-30 \downarrow} \\
 200 \\
 \underline{-180 \downarrow} \\
 20
 \end{array}$$

$$Q = 16, R = 20$$

3. Total books collected for donation = 524  
 Books collected from each school = 50  
 No. of schools from which =  $524 \div 50$   
 Books are collected

$$\begin{array}{r}
 50 \overline{) 524} \text{ (10)} \\
 \underline{-50 \downarrow} \\
 24
 \end{array}$$

$$Q = 10, R = 24$$

4. Total people went to rally = 876  
 People travel in one bus = 45  
 Total number of buses =  $876 \div 45$

$$\begin{array}{r}
 45 \overline{) 876} \text{ (19)} \\
 \underline{-45 \downarrow} \\
 426 \\
 \underline{-405 \downarrow} \\
 21
 \end{array}$$

$$Q = 19, R = 21$$

5. Bottles needed by hiking group in 1 day = 14  
 Total bottles carried = 112  
 Days of trekking =  $112 \div 14 = 8$

$$\begin{array}{r} 14 \overline{) 112} \quad (8 \\ \underline{112} \\ 0 \end{array}$$

6. Total number of newspaper = 5000  
 Total number of boys = 50  
 Newspaper delivered by each boy =  $5000 \div 50 = 100$

$$\begin{array}{r} 8 \overline{) 5000} \quad (100 \\ \underline{-50} \downarrow \downarrow \\ 000 \end{array}$$

### Exercise 6.6

Tick (✓) the correct answer :

1. (a) 
$$\begin{array}{r} 8 \overline{) 549} \quad (68 \\ \underline{-48} \downarrow \\ 69 \\ \underline{-64} \\ 5 \end{array}$$

2. (c) 
$$\begin{array}{r} 9 \overline{) 83016} \quad (9224 \\ \underline{-81} \downarrow \downarrow \downarrow \\ 20 \downarrow \downarrow \\ \underline{-18} \downarrow \\ 21 \downarrow \\ \underline{-18} \downarrow \\ 36 \\ \underline{-36} \\ 0 \end{array}$$

3. (b)

4. (d) Total buttons with Rohan = 21  
 Buttons needed by 1 shirt = 3  
 Total shirts needed =  $21 \div 3 = 7$

$$\begin{array}{r} 3 \overline{) 21} \quad (7 \\ \underline{-21} \\ 0 \end{array}$$

5. (a)

## Chapter-7 (Multiples And Factors)

### Exercise 7.1

1. Complete the set of multiples of :
- (a) 2, 4, 6, 8, 10, 12, 14, 16, 18, 20  
 (b) 4, 8, 12, 16, 20, 24, 28, 32, 36, 40  
 (c) 3, 6, 9, 12, 15, 18, 21, 24, 27, 30  
 (d) 5, 10, 15, 20, 25, 30, 35, 40, 45, 50  
 (e) 8, 16, 24, 32, 40, 48, 56, 64, 72, 80

2. Encircle the multiples of 12 :

16      32      (24)      44      (36)      (60)      (84)      94

3. Find the first 5 multiples of each of the following:

- (a) 10 = 10, 20, 30, 40, 50      (b) 9 = 9, 18, 27, 36, 45  
 (c) 25 = 25, 50, 75, 100, 125      (d) 13 = 13, 26, 39, 52, 65  
 (e) 20 = 20, 40, 60, 80, 100      (f) 15 = 15, 30, 45, 60, 75  
 (g) 14 = 14, 28, 42, 56, 70      (h) 50 = 50, 100, 150, 200, 250

4. Write True or False :  
 (a) True (b) False (c) True (d) False (e) True
5. Add and write whether the sum is even or odd :  
 (a)  $2 + 6 = 8$ , Sum is even. (b)  $12 + 24 = 36$ , Sum is even.  
 (c)  $12 + 13 = 25$ , Sum is odd. (d)  $10 + 20 = 30$ , Sum is even.
6. Tick (✓) the even numbers :  
 12, (15), 18, (27), 37, 28, (96), (143)

### Exercise 7.2

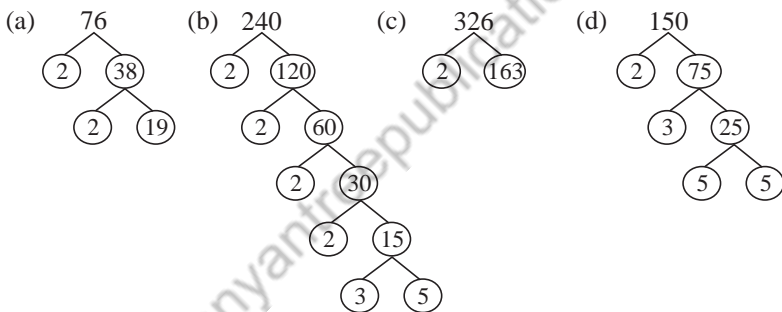
1. Fill in the blanks :  
 (a) 2 and 5 are factors of 10.  
 (b) 3, 5, 9 and 15 are factors of 45.  
 (c) 2, 3, 4 and 6 are factors of 12.  
 (d) 120 is divided by 10 and 5.  
 (e) 8 and 7 are factors of 56.
2. Write two factors of the following numbers other than 1 and the number itself :  
 (a)  $91 = 7, 13$  are two factors.  
 (b)  $75 = 3, 25$  are two factors.  
 (c)  $51 = 3, 17$  are two factors.  
 (d)  $112 = 2, 3$  are two factors.
3. Write three factors of the following numbers other than 1 and the number itself:  
 (a)  $105 = 3, 5, 7$  are three factors. (b)  $30 = 2, 3, 5$  are three factors.  
 (c)  $36 = 2, 3, 6$  are three factors. (d)  $715 = 5, 11, 13$  are three factors.
4. Which of the following numbers are factors of 180?  
 2, 3, 4, 5, 6, 10, 12, 15 and 180 are factors of 180.
5. Which of these are divisible by 10?  
 (a) 300 (b) 800
6. Which of these are divisible by 2 ?  
 (a) 24, 60, 80, 86 (b) 8, 1264, 1000, 1562
7. In each of the following pairs is the first number divisible by the second number.  
 (a), (b) and (d) are three pairs in which first number divisible by second number.

### Exercise 7.3

1. Find whether the given numbers are prime or composite :  
 (a) 18 is a composite number.  
 (b) 27 is a composite number.  
 (c) 56 is a composite number.  
 (d) 33 is a composite number.

2. Composite numbers between 1 and 20.  
4, 6, 8, 9, 10, 12, 14, 15, 16 and 18 are composite numbers between 1 and 20.
3. Prime numbers between 30 and 50  
31, 37, 41, 43, 47 are prime numbers.
4. Fill in the blanks :
  - (a) 0 and 1 are not prime numebrs.
  - (b) 2 is the only even prime number.
  - (c) Numbers that are not prime numbers are composite numbers.
  - (d) All numbers except 0 and 1 are either prime or composite.
5. 2 and 3 are prime numbers whose difference is 1.
6. 4 and 8 are composite numbers whose difference is four.
7. Write the prime factors of the following numbers :
  - (a)  $36 = 2 \times 2 \times 3 \times 3$
  - (b)  $79 = 1 \times 79$
  - (c)  $140 = 2 \times 2 \times 5 \times 7$
  - (d)  $1365 = 3 \times 5 \times 7 \times 13$

8. Find the prime factorization using factor trees:



9. Find the HCF of the following numbers by prime factorization :

(a) 
$$\begin{array}{r|l} 2 & 36, 60 \\ 2 & 18, 30 \\ 3 & 9, 15 \\ \hline & 3, 5 \end{array}$$

HCF of 36, 60 is  
 $2 \times 2 \times 3 = 12$

(b) 
$$\begin{array}{r|l} 2 & 12, 16, 20 \\ 2 & 6, 8, 10 \\ \hline & 3, 4, 5 \end{array}$$

HCF of 12, 16, 20  
is  $2 \times 2 = 4$

(c) 
$$\begin{array}{r|l} 2 & 54, 72, 90 \\ 3 & 27, 36, 45 \\ 3 & 9, 12, 15 \\ \hline & 3, 4, 5 \end{array}$$

HCF of 54, 72, 90  
is  $2 \times 3 \times 3 = 18$

(d) 
$$\begin{array}{r|l} 2 & 24, 40, 56 \\ 2 & 12, 20, 28 \\ 2 & 6, 10, 14 \\ \hline & 3, 5, 7 \end{array}$$

HCF of 24, 40, 56  
is  $2 \times 2 \times 2 = 8$

10. Find the LCM of the following numbers by prime factorization:

$$(a) \begin{array}{r|l} 2 & 16, 24 \\ \hline 2 & 8, 12 \\ \hline 2 & 4, 6 \\ \hline 2 & 2, 3 \\ \hline 3 & 1, 3 \\ \hline & 1, 1 \end{array}$$

LCM of 16, 24 is  
 $2 \times 2 \times 2 \times 2 \times 3 = 48$

$$(b) \begin{array}{r|l} 2 & 14, 21, 28 \\ \hline 2 & 7, 21, 14 \\ \hline 7 & 7, 21, 7 \\ \hline 3 & 1, 3, 1 \\ \hline & 1, 1, 1 \end{array}$$

LCM of 14, 21, 28  
 is  $2 \times 2 \times 3 \times 7$   
 $= 84$

$$(c) \begin{array}{r|l} 2 & 12, 15, 20 \\ \hline 2 & 6, 15, 10 \\ \hline 5 & 3, 15, 5 \\ \hline 3 & 3, 3, 1 \\ \hline & 1, 1, 1 \end{array}$$

LCM of 12, 15, 20  
 is  $2 \times 2 \times 5 \times 3$   
 $= 60$

$$(d) \begin{array}{r|l} 2 & 20, 35, 40 \\ \hline 2 & 10, 35, 20 \\ \hline 5 & 5, 35, 4 \\ \hline 7 & 1, 7, 4 \\ \hline 4 & 1, 1, 4 \\ \hline & 1, 1, 1 \end{array}$$

LCM of 20, 35, 40  
 is  $2 \times 2 \times 5 \times 7 \times 4$   
 $= 560$

### Exercise 7.4

Tick (✓) the correct answer :

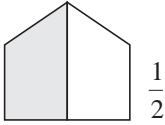
1. (c)    2. (c)    3. (b)    4. (c)    5. (a)

## Chapter-8 (Fractional Numbers)

### Exercise 8.1

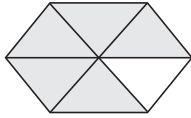
1. Colour each of the following figures given to show the fraction :

(a)



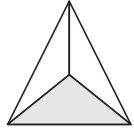
$$\frac{1}{2}$$

(b)



$$\frac{5}{6}$$

(c)



$$\frac{1}{3}$$

2. Write the fraction that names the coloured region :

(a)  $\frac{1}{2}$

(b)  $\frac{3}{8}$

3. Write the fraction that matches each name :

(a) Two-thirds =  $\frac{2}{3}$

(b) Five seventh =  $\frac{5}{7}$

(c) Three-Sixth =  $\frac{3}{6}$

(d) Seventeen-twentieth =  $\frac{17}{20}$

4. Tick the correctly shaded fractions :

(a)  $\frac{1}{2}$  (✓)

(b)  $\frac{1}{3}$  (✓)

(c)  $\frac{5}{6}$

(d)  $\frac{1}{4}$  (✓)

5. Fill in the blanks :

(a) In  $\frac{2}{7}$ , the numerator is 2 and the denominator is 7.

(b) In  $\frac{19}{20}$ , the numerator is 19 and the denominator D is 20.

(c) Fraction is  $\frac{3}{5}$ .

(d) Fraction is  $\frac{17}{3}$ .

### Exercise 8.2

1. Write the equivalent fractions shown in these pictures :

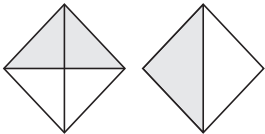
(a)  $\frac{1}{2} = \frac{4}{8}$

(b)  $\frac{1}{4} = \frac{2}{8}$

(c)  $\frac{3}{5} = \frac{3}{5}$

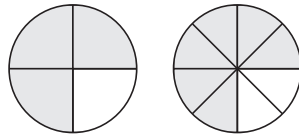
2. Colour the following to show equivalent fractions :

(a)

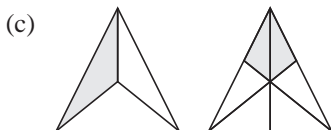


$$\frac{2}{4} = \frac{1}{2}$$

(b)



$$\frac{3}{4} = \frac{6}{8}$$



$$\frac{1}{3} = \frac{2}{6}$$



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

3. Write the next four equivalent fractions for each of the following fractions:

(a)  $\frac{1}{3} = \frac{2}{6}, \frac{3}{9}, \frac{4}{12}, \frac{5}{15}$       (b)  $\frac{2}{5} = \frac{4}{10}, \frac{6}{15}, \frac{8}{20}, \frac{10}{25}$

(c)  $\frac{5}{7} = \frac{10}{14}, \frac{15}{21}, \frac{20}{28}, \frac{25}{35}$

4. Fill in the blanks :

(a)  $\frac{1}{2} = \frac{\boxed{5}}{10}$

(b)  $\frac{2}{5} = \frac{8}{\boxed{20}}$

(c)  $\frac{1}{7} = \frac{3}{\boxed{21}}$

(d)  $\frac{5}{9} = \frac{35}{\boxed{63}}$

(e)  $\frac{4}{7} = \frac{\boxed{44}}{77}$

(f)  $\frac{9}{11} = \frac{63}{\boxed{77}}$

5. Write the equivalent fraction with denominator 30 :

(a)  $\frac{3}{10} = \frac{\boxed{9}}{\boxed{30}}$

(b)  $\frac{2}{3} = \frac{\boxed{20}}{\boxed{30}}$

(c)  $\frac{11}{15} = \frac{\boxed{22}}{\boxed{30}}$

6. Write the equivalent fraction with numerator 36 :

(a)  $\frac{1}{3} = \frac{\boxed{36}}{\boxed{108}}$

(b)  $\frac{2}{9} = \frac{\boxed{36}}{\boxed{162}}$

(c)  $\frac{12}{17} = \frac{\boxed{36}}{\boxed{51}}$

7. The numerator of a fraction is 24. Find the denominator that will make it equivalent to :

(a)  $\frac{4}{7} = \frac{24}{\quad}$

(b)  $\frac{8}{13} = \frac{24}{\quad}$

8. Are the fractions equivalent?

(a)  $\frac{4}{5}, \frac{\boxed{12}}{\boxed{5}}$  No, they are not equal.

(b)  $\frac{3}{7}, \frac{\boxed{1}}{\boxed{8}}$  No, they are not equal.

(c)  $\frac{13}{65}, \frac{\boxed{1}}{\boxed{5}}$  Yes, they are equal.

(d)  $\frac{4}{5}, \frac{\boxed{8}}{\boxed{10}}$  Yes, they are equal.

(e)  $\frac{7}{8}, \frac{\boxed{14}}{\boxed{16}}$  Yes, they are equal.

(f)  $\frac{5}{7}, \frac{\boxed{60}}{\boxed{84}}$  Yes, they are equal.

9. Find an equivalent fraction of  $\frac{6}{7}$  with :

(a) Numerator 18 =  $\frac{18}{\quad}$

(b) Denominator 28 =  $\frac{24}{28}$

10. Find an equivalent fraction of  $\frac{40}{48}$  with

(a) Denominator = 12 =  $\frac{10}{12}$

(b) Numerator 20 =  $\frac{20}{24}$

11. Reduce to lowest terms :

(a)  $\frac{3^1}{6 \cdot 2} = \frac{1}{2}$

(b)  $\frac{2^1}{10 \cdot 5} = \frac{1}{5}$

(c)  $\frac{12^6}{28 \cdot 14} = \frac{6^3}{14 \cdot 7} = \frac{3}{7}$

(d)  $\frac{14^2}{35 \cdot 5} = \frac{2}{5}$

(e)  $\frac{12^6}{8 \cdot 4} = \frac{6^3}{4 \cdot 2} = \frac{3}{2}$

(f)  $\frac{20^{10}}{16 \cdot 8} = \frac{10^5}{8 \cdot 4} = \frac{5}{4}$

12. Which of these are in simplest form?

$\frac{3}{7}$ ,  $\frac{33}{28}$ ,  $\frac{9}{14}$  and  $\frac{17}{23}$  are in simplest form.

### Exercise 8.3

1. Write > or < in the blanks :

(a)  $\frac{3}{7} < \frac{6}{7}$

(b)  $\frac{7}{9} > \frac{4}{9}$

(c)  $\frac{8}{13} > \frac{2}{13}$

(d)  $\frac{5}{11} > \frac{4}{13}$

(e)  $\frac{1}{16} < \frac{1}{15}$

(f)  $\frac{5}{7} < \frac{5}{6}$

(g)  $\frac{5}{12} < \frac{1}{2}$

(h)  $\frac{5}{6} < \frac{11}{12}$

(i)  $\frac{3}{7} < \frac{2}{3}$

2. Find the smallest common denominator and compare :

(a)  $\frac{5}{8} < \frac{3}{4}$

(b)  $\frac{2}{3} > \frac{3}{5}$

(c)  $\frac{2}{3} < \frac{5}{6}$

3. Arrange the following in ascending order :

(a)  $\frac{2}{9} < \frac{3}{9} < \frac{4}{9} < \frac{5}{9}$

(b)  $\frac{1}{5} < \frac{2}{5} < \frac{3}{5} < \frac{4}{5}$

(c)  $\frac{5}{10} < \frac{6}{10} < \frac{8}{10} < \frac{9}{10}$

(d)  $\frac{10}{15} < \frac{11}{15} < \frac{12}{15}$

4. Arrange the following in descending order :

(a)  $\frac{8}{8} > \frac{5}{8} > \frac{4}{8} > \frac{1}{8}$

(b)  $\frac{9}{12} > \frac{8}{12} > \frac{7}{12} > \frac{3}{12}$

(c)  $\frac{13}{15} > \frac{11}{15} > \frac{7}{15} > \frac{4}{15}$

(d)  $\frac{11}{13} > \frac{8}{13} > \frac{7}{13} > \frac{5}{13} > \frac{4}{13} > \frac{2}{13}$

5. Write the following in ascending order :

(a)  $\frac{3}{11} < \frac{3}{10} < \frac{3}{8} < \frac{3}{7} < \frac{3}{5}$

(b)  $\frac{5}{12} < \frac{5}{11} < \frac{5}{9} < \frac{5}{8} < \frac{5}{6}$

(c)  $\frac{10}{43} < \frac{10}{34} < \frac{10}{21} < \frac{10}{17} < \frac{10}{12}$

(d)  $\frac{11}{15} < \frac{11}{13} < \frac{11}{12} < \frac{11}{9} < \frac{11}{8}$

6. Write the following in descending order :

(a)  $\frac{4}{5} > \frac{4}{6} > \frac{4}{7} > \frac{4}{9} > \frac{4}{11}$

(b)  $\frac{9}{10} > \frac{9}{11} > \frac{9}{12} > \frac{9}{15} > \frac{9}{20}$

$$(c) \frac{12}{15} > \frac{12}{16} > \frac{12}{23} > \frac{12}{27} > \frac{12}{34} \quad (d) \frac{3}{7} > \frac{3}{8} > \frac{3}{11} > \frac{3}{13} > \frac{3}{16}$$

7. Arrange in ascending order and descending order :

$$(a) \text{ Ascending } = \frac{1}{6}, \frac{2}{10}, \frac{3}{6}, \frac{4}{6}, \frac{5}{6} \quad (b) \text{ Ascending } = \frac{5}{21}, \frac{5}{17}, \frac{5}{11}, \frac{5}{8}, \frac{5}{6}$$

$$\text{Descending} = \frac{5}{6}, \frac{4}{6}, \frac{3}{6}, \frac{2}{10}, \frac{1}{6} \quad \text{Descending} = \frac{5}{6}, \frac{5}{8}, \frac{5}{11}, \frac{5}{17}, \frac{5}{21}$$

8. Deepa walked  $\frac{3}{4}$  km

Sudha walked  $\frac{3}{5}$  km

Deepa walked more than Sudha.

10. Write each as a division sum :

$$(a) 4 \div 5 \quad (b) 13 \div 4 \quad (c) 3 \div 10 \quad (d) 19 \div 6$$

9. Write each as a fraction :

$$(a) 14 \div 31 = \frac{14}{31} \quad (b) 13 \div 15 = \frac{13}{15}$$

$$(c) 5 \div 10 = \frac{5}{10} \quad (d) 7 \div 21 = \frac{7}{21}$$

11. Write mixed fractions for the following :

$$(a) \frac{5}{4} = 1\frac{1}{4} \quad (b) \frac{11}{5} = 2\frac{1}{5} \quad (c) \frac{19}{6} = 3\frac{1}{6} \quad (d) \frac{18}{7} = 2\frac{4}{7}$$

12. Write improper fractions for the following :

$$(a) 2\frac{1}{3} = \frac{7}{3} \quad (b) 5\frac{1}{6} = \frac{31}{6} \quad (c) 17\frac{2}{3} = \frac{53}{3} \quad (d) 23\frac{1}{4} = \frac{93}{4}$$

### Exercise 8.4

1. Add :

$$(a) \frac{2}{6} + \frac{3}{6} = \frac{5}{6} \quad (b) \frac{1}{8} + \frac{3}{8} = \frac{4}{8} = \frac{1}{2} \quad (c) \frac{1}{4} + \frac{1}{4} = \frac{2}{4} = \frac{1}{2}$$

$$(d) \frac{4}{9} + \frac{1}{9} = \frac{5}{9} \quad (e) \frac{3}{16} + \frac{5}{16} + \frac{9}{16} = \frac{17}{16} \quad (f) \frac{7}{17} + \frac{8}{17} + \frac{5}{17} = \frac{20}{17}$$

2. Subtract :

$$(a) \frac{5}{6} - \frac{3}{6} = \frac{2}{6} = \frac{1}{3} \quad (b) \frac{6}{8} - \frac{1}{8} = \frac{5}{8}$$

$$(c) \frac{5}{6} - \frac{1}{6} = \frac{4}{6} = \frac{2}{3} \quad (d) \frac{3}{8} - \frac{2}{8} = \frac{1}{8}$$

$$(e) \frac{4}{5} - \frac{1}{5} = \frac{3}{5} \quad (f) \frac{6}{10} - \frac{1}{10} = \frac{5}{10} = \frac{1}{2}$$

3. Change into like fractions and add :

(a)  $\frac{5}{6} + \frac{7}{8}$

$$= \frac{5 \times 4}{6 \times 4} + \frac{7 \times 3}{8 \times 3} = \frac{20}{24} + \frac{21}{24} = \frac{41}{24}$$

(b)  $\frac{7}{12} + \frac{13}{18}$

$$= \frac{7 \times 3}{12 \times 3} + \frac{13 \times 2}{18 \times 2} = \frac{21}{36} + \frac{26}{36} = \frac{47}{36}$$

(c)  $\frac{2}{21} + \frac{5}{14}$

$$= \frac{2 \times 2}{21 \times 2} + \frac{5 \times 3}{14 \times 3} = \frac{4}{42} + \frac{15}{42} = \frac{19}{42}$$

(d)  $\frac{8}{15} + \frac{7}{10} + \frac{11}{18}$

$$= \frac{8 \times 6}{15 \times 6} + \frac{7 \times 9}{10 \times 9} + \frac{11 \times 5}{18 \times 5} = \frac{48}{90} + \frac{63}{90} + \frac{55}{90} = \frac{166}{90}$$

(e)  $\frac{3}{10} + \frac{9}{20} + \frac{17}{30}$

$$= \frac{3 \times 6}{10 \times 6} + \frac{9 \times 3}{20 \times 3} + \frac{17 \times 2}{30 \times 2} = \frac{18}{60} + \frac{27}{60} + \frac{34}{60} = \frac{79}{60}$$

(f)  $\frac{3}{7} + \frac{9}{28} + \frac{5}{14}$

$$= \frac{3 \times 4}{7 \times 4} + \frac{9 \times 1}{28 \times 1} + \frac{5 \times 2}{14 \times 2} = \frac{12}{28} + \frac{9}{28} + \frac{10}{28} = \frac{31}{28}$$

(g)  $1\frac{1}{2} + 1\frac{1}{3} + 1\frac{1}{4}$

$$= \frac{3}{4} + \frac{4}{3} + \frac{5}{4} = \frac{3 \times 3}{4 \times 3} + \frac{4 \times 4}{3 \times 4} + \frac{5 \times 3}{4 \times 3} = \frac{9}{12} + \frac{16}{12} + \frac{15}{12} = \frac{40}{12} = \frac{20}{6} = \frac{10}{3}$$

(h)  $1\frac{5}{8} + \frac{11}{2} + 2$

$$= \frac{13}{8} + \frac{11}{2} + 2 = \frac{13 \times 3}{8 \times 3} + \frac{11 \times 2}{2 \times 2} + \frac{2 \times 24}{1 \times 24} = \frac{39}{24} + \frac{22}{24} + \frac{48}{24} = \frac{109}{24}$$

(i)  $2\frac{2}{3} + 3\frac{3}{4} + 5\frac{5}{6}$

$$= \frac{8}{3} + \frac{15}{4} + \frac{35}{6} = \frac{8 \times 4}{3 \times 4} + \frac{15 \times 3}{4 \times 3} + \frac{35 \times 2}{6 \times 2} = \frac{32}{12} + \frac{45}{12} + \frac{70}{12} = \frac{147}{12}$$

4. Subtract :

(a)  $\frac{5}{6} - \frac{3}{5}$

$$= \frac{5 \times 5}{6 \times 5} - \frac{3 \times 6}{5 \times 6} = \frac{25}{30} - \frac{12}{30} = \frac{13}{30}$$

$$(b) \frac{5}{12} - \frac{3}{8}$$

$$= \frac{5 \times 2}{12 \times 2} - \frac{3 \times 3}{8 \times 3} = \frac{10}{24} - \frac{9}{24} = \frac{1}{24}$$

$$(c) 2\frac{1}{2} - 1\frac{3}{4}$$

$$= \frac{5}{2} - \frac{7}{4} = \frac{5 \times 2}{2 \times 2} - \frac{7 \times 1}{4 \times 1} = \frac{10}{4} - \frac{7}{4} = \frac{3}{4}$$

$$(d) 10 - 6\frac{1}{12}$$

$$= 10 - \frac{73}{12} = \frac{10 \times 12}{1 \times 12} - \frac{73}{12} = \frac{120}{12} - \frac{73}{12} = \frac{47}{12}$$

$$(e) 7 - \frac{22}{5}$$

$$= \frac{7 \times 5}{1 \times 5} - \frac{22 \times 1}{5 \times 1} = \frac{35}{5} - \frac{22}{5} = \frac{13}{5}$$

$$(f) 14\frac{1}{2} - 5\frac{3}{5}$$

$$= \frac{29}{2} - \frac{28}{5} = \frac{29 \times 5}{2 \times 5} - \frac{28 \times 2}{5 \times 2} = \frac{145}{10} - \frac{56}{10} = \frac{89}{10}$$

$$(g) 7\frac{3}{4} - 5\frac{4}{5}$$

$$= \frac{31}{4} - \frac{29}{5} = \frac{31 \times 5}{4 \times 5} - \frac{29 \times 4}{5 \times 4} = \frac{155}{20} - \frac{116}{20} = \frac{39}{20}$$

$$(h) 17\frac{1}{4} - 1\frac{5}{7}$$

$$= \frac{69}{4} - \frac{12}{7} = \frac{69 \times 7}{4 \times 7} - \frac{12 \times 4}{7 \times 4} = \frac{483}{28} - \frac{48}{28} = \frac{435}{28}$$

$$(i) 6\frac{2}{5} - 2\frac{3}{4}$$

$$= \frac{32}{5} - \frac{11}{4} = \frac{32 \times 4}{5 \times 4} - \frac{11 \times 5}{4 \times 5} = \frac{128}{20} - \frac{55}{20} = \frac{73}{20}$$

$$5. \frac{3}{4}m + \frac{3}{5}m + \frac{6}{10}m$$

$$= \frac{3 \times 5}{4 \times 5} + \frac{3 \times 4}{5 \times 4} + \frac{6 \times 2}{10 \times 2} = \frac{15}{20} + \frac{12}{20} + \frac{12}{20} = \frac{39}{20}m$$

$$6. \text{ Yellow ribbon bought by Neha} = 1\frac{4}{5}$$

$$\text{Red ribbon bought by Neha} = 2\frac{1}{4}$$

$$\text{Black ribbon bought by Neha} = 2\frac{1}{2}$$

$$\begin{aligned} \text{Total length of ribbon} &= \left[ 1\frac{4}{5} + 2\frac{1}{4} + 2\frac{1}{2} \right] \text{m} \\ &= \frac{9}{5} + \frac{9}{4} + \frac{5}{2} = \frac{9 \times 4}{5 \times 4} + \frac{9 \times 5}{4 \times 5} + \frac{5 \times 10}{2 \times 10} \\ &= \frac{36}{20} + \frac{45}{20} + \frac{50}{20} = \frac{131}{20} \end{aligned}$$

$$7. \text{ Hours travelled in bus} = 3\frac{5}{6}$$

$$\text{Hours travelled in train} = 2\frac{1}{4}$$

$$\text{Hours travelled in rickshaw} = \frac{2}{5}$$

$$\begin{aligned} \text{Total hours for reaching home} &= 3\frac{5}{6} + 2\frac{1}{4} + \frac{2}{5} \\ &= \frac{23}{6} + \frac{9}{4} + \frac{2}{5} = \frac{23 \times 10}{6 \times 10} + \frac{9 \times 15}{4 \times 15} + \frac{2 \times 12}{5 \times 12} \\ &= \frac{230}{60} + \frac{135}{60} + \frac{24}{60} = \frac{389}{60} \end{aligned}$$

$$8. \text{ Total length of Ribbon} = 3\frac{4}{5} \text{ m}$$

$$\text{Sonal cut off} = 1\frac{3}{5} \text{ m}$$

$$\text{Ribbon left} = \left[ 3\frac{4}{5} - 1\frac{3}{5} \right] \text{m} = \frac{19}{5} - \frac{8}{5} = \frac{11}{5} \text{ m}$$

$$9. \text{ Water in drum} = 90 \text{ l}$$

$$\text{Water wasted} = 1\frac{3}{10} \text{ l}$$

$$\text{Water left in drum} = 90 - 1\frac{3}{10} = \frac{900}{10} - \frac{13}{10} = \frac{887}{10} = 88.7 \text{ l}$$

### Exercise 8.5

Tick (✓) the correct answer :

$$1. \quad (a) \frac{12^{\times 2}}{18 \times 3} = \frac{2}{3} \qquad 2. \quad (c)$$

$$3. \quad (b) \frac{5}{8} \times 560 = 5 \times 70 = 350$$

$$4. \quad (a) \frac{1}{2} \times 60 \text{ minutes} = 30 \text{ minutes}$$

## Test Paper-II

1. Multiply :

(a)  $10 \times 32 \times 20 = \underline{6400}$

(b)  $660 \times 100 = \underline{66000}$

(c)  $24 \times 50 = \underline{1200}$

(d)  $200 \times 10 = \underline{2000}$

(e)  $180 \times 500 = \underline{90000}$

(f)  $2000 \times 0 = \underline{0}$

(g)  $1000 \times 14 = \underline{14000}$

(h)  $120 \times 110 = \underline{13200}$

2. Divide :

$$\begin{array}{r} 18 \overline{) 2054} \text{ (114)} \\ \underline{-18} \downarrow \\ 25 \downarrow \\ \underline{-18} \downarrow \\ 74 \\ \underline{-72} \\ 2 \end{array}$$

$$\begin{array}{r} 35 \overline{) 7565} \text{ (216)} \\ \underline{-70} \downarrow \\ 56 \downarrow \\ \underline{-35} \downarrow \\ 215 \\ \underline{-210} \\ 5 \end{array}$$

$$\begin{array}{r} 19 \overline{) 86009} \text{ (4526)} \\ \underline{-76} \downarrow \downarrow \downarrow \\ 100 \downarrow \downarrow \downarrow \\ \underline{-95} \downarrow \downarrow \downarrow \\ 50 \downarrow \downarrow \downarrow \\ \underline{-38} \downarrow \downarrow \downarrow \\ 129 \downarrow \downarrow \downarrow \\ \underline{-114} \downarrow \downarrow \downarrow \\ 15 \end{array}$$

$$\begin{array}{r} (d) \ 606 \overline{) 6666} \text{ (11)} \\ \underline{-606} \downarrow \\ 606 \\ \underline{-606} \\ 0 \end{array}$$

$$\begin{array}{r} (e) \ 745 \overline{) 80124} \text{ (17)} \\ \underline{-745} \downarrow \downarrow \\ 5624 \\ \underline{-5215} \\ 409 \end{array}$$

$$\begin{array}{r} (f) \ 428 \overline{) 90328} \text{ (211)} \\ \underline{-856} \downarrow \downarrow \downarrow \\ 472 \downarrow \downarrow \downarrow \\ \underline{-428} \downarrow \downarrow \downarrow \\ 448 \downarrow \downarrow \downarrow \\ \underline{-428} \downarrow \downarrow \downarrow \\ 20 \end{array}$$

3. Add and write whether the sum is even or odd :

(a)  $3 + 4 = 7$ , sum is odd.

(b)  $13 + 23 = 36$ , sum is even.

(c)  $13 + 12 = 25$ , sum is odd.

(d)  $30 + 40 = 70$ , sum is even.

4. Write the fractions that matches each name :

(a) Two thirds =  $\frac{2}{3}$

(b) Five-sevenths =  $\frac{5}{7}$

(c) Three sixths =  $\frac{3}{6}$

(d) Seventeen - twentieths =  $\frac{17}{20}$

5. Fill in the blanks :

(a)  $3000 \times 0 = \underline{0}$

(b)  $180 \times 120 = \underline{21600}$

(c)  $50,000 \div 50 = \underline{1000}$

(d) 26 is even.

6. Tick (✓) the correct answer :

(a) (iii)

(b) (ii)

$$\begin{array}{r} 5 \ 7 \ 6 \ 9 \\ \times 8 \\ \hline 4 \ 6 \ 1 \ 5 \ 2 \end{array}$$

(c) (i)

(d) (ii)

(e) (iii)

### Model Paper-I

- Write Roman numerals for the following:
 

(a) 5 = V	(b) 23 = XXIII	(c) 36 = XXXVI
(d) 72 = LXXII	(e) 68 = LXVIII	(f) 93 = XCIII
- Form the biggest and smallest six-digit numbers with the given digits:
 

(a) Smallest      102568	(b) Smallest      103789
Biggest      865210	Biggest      987310
(c) Smallest      102478	
Biggest      874210	
- Add :
 

(a) <table style="margin-left: 20px; border-collapse: collapse;"> <tr><td style="text-align: right;">T-ThTh H T O</td></tr> <tr><td style="text-align: right;">3 2 1 6 3</td></tr> <tr><td style="text-align: right;">+ 1 5 8 2 5</td></tr> <tr><td style="text-align: right;">-----</td></tr> <tr><td style="text-align: right;">4 7 9 8 8</td></tr> </table>	T-ThTh H T O	3 2 1 6 3	+ 1 5 8 2 5	-----	4 7 9 8 8	(b) <table style="margin-left: 20px; border-collapse: collapse;"> <tr><td style="text-align: right;">T-ThTh H T O</td></tr> <tr><td style="text-align: right;">①</td></tr> <tr><td style="text-align: right;">9 8 3 2 5</td></tr> <tr><td style="text-align: right;">+ 5 7 0 1 3</td></tr> <tr><td style="text-align: right;">-----</td></tr> <tr><td style="text-align: right;">1 5 5 3 3 8</td></tr> </table>	T-ThTh H T O	①	9 8 3 2 5	+ 5 7 0 1 3	-----	1 5 5 3 3 8	(c) <table style="margin-left: 20px; border-collapse: collapse;"> <tr><td style="text-align: right;">T-ThTh H T O</td></tr> <tr><td style="text-align: right;">① ①</td></tr> <tr><td style="text-align: right;">6 3 2 1 7</td></tr> <tr><td style="text-align: right;">+ 3 1 3 8 9</td></tr> <tr><td style="text-align: right;">-----</td></tr> <tr><td style="text-align: right;">9 4 6 0 6</td></tr> </table>	T-ThTh H T O	① ①	6 3 2 1 7	+ 3 1 3 8 9	-----	9 4 6 0 6
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- Multiply :
 

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- Divide :
 

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- Write three factors of the following numbers other than 1 and the number itself :
 

(a) 108 = 2, 3, 6	(b) 30 = 2, 3, 5	(c) 860 = 2, 5, 10
-------------------	------------------	--------------------
- Write the equivalent fraction with numerator 36 :
 

(a) $\frac{1}{3} = \frac{\boxed{36}}{\boxed{108}}$	(b) $\frac{12}{17} = \frac{\boxed{36}}{\boxed{51}}$
--	---
- Fill in the blanks :
 

(a) L, D	(b) 5, 83, 990	(c) 91, 6, 12	(d) 65520
----------	----------------	---------------	-----------
- Tick the correct answer :
 

(a) (ii)	(b) (i)	(c) (ii)
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## Chapter-9 (Number Patterns)

### Exercise 9.1

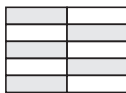
- Find a pattern and fill in the blanks :
  - $256, 128, 64, 32, 16, 8$
  - $1, 4, 9, 16, 25, 36$
  - $90, 290, 490, 690, 890, 1090$
  - $2, 4, 8, 16, 32, 64$
  - $1, 4, 7, 10, 13, 16$
- Find the pattern in the differences of consecutive pairs and fill in the missing numbers :
  - $10, 25, 50, 85, 130, 185, 250$
  - $5, 15, 25, 35, 45, 55, 65$
  - $2, 8, 18, 32, 50, 32, 38$
- Look at the pattern and add using a shortcut :
  - $1 + 2 + 3 + 4 + 5 + 6 + 7 = 7 \times 3 + 7 = 28$
  - $1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 = 6 \times 6 = 36$
- Show the numbers 10, 15, 21 as triangles :
- Look at pattern and fill in the blanks :
  - $49 + 50 + 51 + 52 = 202$
  - $7 + 8 + 9 + 10 = 34$
  - $101 + 102 + 103 + 104 = 409$
- Look at the pattern and fill in the blanks :
  - $55555 \times 5 = 277775$
  - $555555 \times 5 = 2777775$
- Find the pattern and fill in the blanks :
  - $444 \div 12 = 37$
  - $555 \div 15 = 37$
  - $666 \div 18 = 37$
  - $777 \div 21 = 37$

## Chapter-10 (Decimal Fractions)

### Exercise 10.1

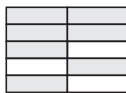
- Write as decimals :

(a)



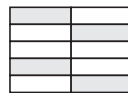
0.5

(b)



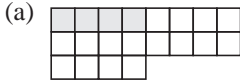
0.7

(c)

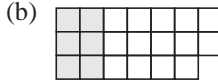


0.4

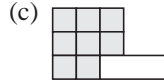
2. Shade squares to match the decimals :



0.4



0.6



0.8

3. Change in decimal notation :

(a)  $\frac{4}{10} = 0.4$

(b)  $\frac{5}{10} = 0.5$

(c)  $\frac{42}{10} = 4.2$

(d)  $\frac{13}{10} = 1.3$

(e)  $\frac{86}{10} = 8.6$

(f)  $\frac{4}{100} = 0.04$

(g)  $\frac{8}{100} = 0.08$

(h)  $\frac{24}{100} = 0.24$

(i)  $\frac{36}{100} = 0.36$

(j)  $\frac{237}{1000} = 0.237$

(k)  $\frac{673}{1000} = 0.673$

(l)  $\frac{211}{100} = 2.11$

(m)  $\frac{85}{1000} = 0.085$

(n)  $\frac{3543}{1000} = 3.543$

(o)  $\frac{846}{100} = 8.46$

4. Write the common and decimal fraction for the shaded portion :

(a)  $\frac{14}{100}$ , 0.14

(b)  $\frac{34}{100}$ , 0.34

(c)  $\frac{42}{100}$ , 0.42

5. Read and write the number names :

(a) 0.05 = Zero point zero five.

(b) 21.468 = Twenty one point four sixty eight.

(c) 18.38 = Eighteen point three eight.

(d) 19.306 = Nineteen point three zero six.

6. Write the place value of each digit in :

(a)  $26.48 = 20 + 6 + \frac{4}{10} + \frac{8}{100}$

(b)  $11.246 = 10 + 1 + \frac{2}{10} + \frac{4}{100} + \frac{6}{1000}$

(c)  $36.48 = 30 + 6 + \frac{4}{10} + \frac{8}{100}$

(d)  $103.009 = 100 + 3 + \frac{9}{1000}$

7. Write the expanded form :

(a)  $6.35 = 6 + \frac{3}{10} + \frac{5}{100}$

(b)  $19.46 = 10 + 9 + \frac{4}{10} + \frac{6}{100}$

(c)  $24.831 = 20 + 4 + \frac{8}{10} + \frac{3}{100} + \frac{1}{1000}$

(d)  $19.004 = 10 + 9 + \frac{4}{1000}$

8. Write in standard form :

(a)  $\frac{2}{10} + \frac{7}{100} + \frac{8}{1000} = 0.278$

(b)  $30 + 2 + 0.5 + 0.06 + \frac{9}{1000} = 32.569$

9. Tell whether the following fractions are equivalent or not :

(a) Yes

(b) Yes

(c) Yes

(d) Yes

10. Write > or < or =:

(a)  $2.2 \square 2.022$

(b)  $0.9 \square 0.81$

(c)  $0.2 \square 2.786$

(d)  $24.800 \square 24.80$

(e)  $7.077 \square 7.77$

(f)  $0.63 \square 0.8$

11. Rewrite in descending order :

(a) 7.53, 7.04, 3.56, 2.3

(b) 80.4, 80.002, 8.6, 8.36

(c) 5.02, 2.8, 2.1, 1.37

(d) 19.34, 19.2, 1.934, 1.93

12. Rewrite in ascending order :

(a) 5.12, 6.01, 6.052, 6.1

(b) 5.07, 5.7, 7.05, 7.55

(c) 0.02, 0.14, 1.04, 1.08

(d) 0.99, 1.1, 8.06, 9.08

### Exercise 10.2

1. Add :

$$\begin{array}{r} 2 \cdot 73 \\ + 1 \cdot 8 \\ + 0 \cdot 032 \\ \hline 4 \cdot 562 \end{array}$$

$$\begin{array}{r} 12 \cdot 006 \\ + 10 \cdot 8 \\ \hline 253 \cdot 24 \\ \hline 276 \cdot 046 \end{array}$$

$$\begin{array}{r} 216 \cdot 349 \\ + 45 \cdot 5 \\ + 5 \cdot 05 \\ \hline 266 \cdot 859 \end{array}$$

2. Find the sum :

$$\begin{array}{r} 11 \cdot 20 \\ + 0 \cdot 2 \\ + 2 \\ \hline 13 \cdot 4 \end{array}$$

$$\begin{array}{r} 17 \cdot 85 \\ + 12 \cdot 50 \\ + 0 \cdot 4 \\ \hline 30 \cdot 75 \end{array}$$

$$\begin{array}{r} 5 \cdot 301 \\ + 2 \cdot 620 \\ \hline 8 \cdot 038 \\ \hline 15 \cdot 959 \end{array}$$

$$\begin{array}{r} 12 \cdot 06 \\ + 81 \cdot 2 \\ + 1 \cdot 863 \\ \hline 95 \cdot 123 \end{array}$$

3. Subtract :

$$\begin{array}{r} 376 \cdot 101 \\ - 06 \cdot 000 \\ \hline 70 \cdot 101 \end{array}$$

$$\begin{array}{r} 39 \cdot 87 \\ - 24 \cdot 60 \\ \hline 15 \cdot 27 \end{array}$$

$$\begin{array}{r} 100 \cdot 000 \\ - 23 \cdot 121 \\ \hline 76 \cdot 879 \end{array}$$

4. Find the difference :

$$\begin{array}{r} 0 \cdot 21 \\ - 0 \cdot 12 \\ \hline 0 \cdot 09 \end{array}$$

$$\begin{array}{r} 8 \cdot 00 \\ - 2 \cdot 54 \\ \hline 5 \cdot 46 \end{array}$$

$$\begin{array}{r} 12 \cdot 32 \\ - 12 \cdot 01 \\ \hline 0 \cdot 31 \end{array}$$

$$\begin{array}{r} 186 \cdot 10 \\ - 98 \cdot 01 \\ \hline 88 \cdot 09 \end{array}$$

5. Multiply :

$$\begin{array}{r} 24 \cdot 20 \\ \times 52 \\ \hline 1258 \cdot 4 \end{array}$$

$$\begin{array}{r} 12 \cdot 216 \\ \times 8 \\ \hline 97 \cdot 728 \end{array}$$

$$\begin{array}{r} 102 \cdot 88 \\ \times 6 \\ \hline 617 \cdot 28 \end{array}$$

$$\begin{array}{r} 63 \cdot 5 \\ \times 35 \\ \hline 2222 \cdot 5 \end{array}$$

$$\begin{array}{r} 6 \cdot 820 \\ \times 6 \\ \hline 40 \cdot 92 \end{array}$$

$$\begin{array}{r} 83 \cdot 62 \\ \times 54 \\ \hline 4515 \cdot 48 \end{array}$$

$$\begin{array}{r} \text{(g)} \quad 58 \cdot 2 \\ \times 32 \\ \hline 1862 \cdot 4 \end{array}$$

$$\begin{array}{r} \text{(h)} \quad 12 \cdot 31 \\ \times 9 \\ \hline 110 \cdot 79 \end{array}$$

$$\begin{array}{r} \text{(i)} \quad 106 \cdot 83 \\ \times 5 \\ \hline 534 \cdot 15 \end{array}$$

6. Divide :

$$\begin{array}{r} \text{(a)} \quad 8.6 \\ 12 \overline{) 103.2} \\ \underline{-96} \phantom{0} \\ 72 \\ \underline{-72} \\ 0 \end{array}$$

$$\begin{array}{r} \text{(b)} \quad 6.841 \\ 12 \overline{) 82.092} \\ \underline{-72} \phantom{0} \phantom{0} \phantom{0} \\ 100 \phantom{0} \phantom{0} \phantom{0} \\ \underline{-96} \phantom{0} \phantom{0} \phantom{0} \\ 49 \phantom{0} \phantom{0} \phantom{0} \\ \underline{-48} \phantom{0} \phantom{0} \phantom{0} \\ 12 \phantom{0} \phantom{0} \phantom{0} \\ \underline{-12} \phantom{0} \phantom{0} \phantom{0} \\ 0 \end{array}$$

$$\begin{array}{r} \text{(c)} \quad 1.36 \\ 12 \overline{) 16.34} \\ \underline{-12} \phantom{0} \phantom{0} \\ 43 \phantom{0} \\ \underline{-36} \phantom{0} \\ 74 \\ \underline{-72} \\ 2 \end{array}$$

$$\begin{array}{r} \text{(d)} \quad 1.44 \\ 12 \overline{) 17.28} \\ \underline{-12} \phantom{0} \phantom{0} \\ 52 \phantom{0} \\ \underline{-48} \phantom{0} \\ 48 \\ \underline{-48} \\ 0 \end{array}$$

$$\begin{array}{r} \text{(e)} \quad 1.05 \\ 9 \overline{) 0.945} \\ \underline{-9} \phantom{0} \phantom{0} \\ 045 \\ \underline{-045} \\ 0 \end{array}$$

$$\begin{array}{r} \text{(f)} \quad 0.38 \\ 12 \overline{) 5.80} \\ \underline{-45} \phantom{0} \\ 130 \\ \underline{-120} \\ 10 \end{array}$$

$$\begin{array}{r} \text{(g)} \quad 0.75 \\ 9 \overline{) 6.75} \\ \underline{-63} \phantom{0} \\ 45 \\ \underline{-45} \\ 0 \end{array}$$

$$\begin{array}{r} \text{(h)} \quad 0.73 \\ 5 \overline{) 3.85} \\ \underline{-35} \phantom{0} \\ 15 \\ \underline{-15} \\ 0 \end{array}$$

$$\begin{array}{r} \text{(i)} \quad 11.9 \\ 48 \overline{) 575.4} \\ \underline{-48} \phantom{0} \phantom{0} \\ 95 \phantom{0} \\ \underline{-48} \phantom{0} \\ 474 \\ \underline{-432} \\ 42 \end{array}$$

7. Sunil purchased ruler = Rs. 2.40  
Sunil purchased pencil = Rs. 1.82

$$\begin{array}{r} \textcircled{1} \\ 2 \cdot 40 \\ + 1 \cdot 82 \\ \hline 4 \cdot 22 \end{array}$$

8. Total money in bank = 605.23  
Money deposited = 319.50

$$\begin{array}{r} \textcircled{1} \\ 605 \cdot 23 \\ + 319 \cdot 50 \\ \hline 924 \cdot 73 \end{array}$$

9. Money carried by Rony = Rs. 5.50  
Candy bought from there = Rs. 2.40

$$\begin{array}{r} 5 \cdot 50 \\ - 2 \cdot 40 \\ \hline 3 \cdot 10 \end{array}$$

10. Toy bought for = Rs. 102.52  
Money given to the shopkeeper = Rs. 150  
Money returned to the shopkeeper = 47.48

$$\begin{array}{r} \textcircled{4} \textcircled{9} \\ 150 \cdot 00 \\ - 102 \cdot 52 \\ \hline 47 \cdot 48 \end{array}$$

### Exercise 10.3

Tick (✓) the correct answer :

1. (b)    2. (a)    3. (a)    4. (b)    5. (b)

## Chapter-11 (Money)

### Exercise 11.1

1. Fill in the blanks :

- (a) 1 note of Rs. 50 = 5 notes of Rs. 10 each  
 (b) 1 note of Rs. 500 = 10 notes of Rs. 50 each  
 (c) 1 note of Rs. 2000 = 4 notes of Rs. 500 each  
 (d) 1 note of Rs. 2000 = 20 notes of Rs. 100 each

2. Count the money :

- (a)  $500 + 100 + 20 = 620$   
 (b)  $50 + 20 + 10 + 5 + 2 + 2 = 89$   
 (c)  $2000 + 500 + 50 + 10 + 5 + 1 = 2566$   
 (d)  $50 + 50 + 20 + 2 + 2 + 1 = 125$

3. Cost of 1 ticket = ₹43  
 Cost of 5 tickets =  $43 \times 5$   
 = 215

Total money paid ₹215.

4. Cost of 7 pineapple drink bottles = ₹196  
 Cost of 1 pineapple drink bottle =  $196 \div 7$   
 = ₹28

$$\begin{array}{r} 28 \\ 7 \overline{) 196} \\ \underline{-14} \phantom{0} \\ 56 \\ \underline{-56} \\ 0 \end{array}$$

5. Total money with Sakshi = ₹225  
 Money spent by Sakshi = ₹167  
 Money left with Sakshi = ₹(225 - 167)  
 = ₹58

$$\begin{array}{r} \text{H T O} \\ 225 \\ \underline{-167} \\ 58 \end{array}$$

### Exercise 11.2

1. Cost of 8 bus tickets = ₹290.40  
 Cost of 1 bus ticket = ₹(290.40 ÷ 8)  
 = ₹36.30

$$\begin{array}{r} 36.30 \\ 8 \overline{) 290.40} \\ \underline{-24} \phantom{0} \phantom{0} \phantom{0} \\ 50 \phantom{0} \phantom{0} \phantom{0} \\ \underline{-48} \phantom{0} \phantom{0} \phantom{0} \\ 24 \phantom{0} \phantom{0} \phantom{0} \\ \underline{-24} \phantom{0} \phantom{0} \phantom{0} \\ 00 \end{array}$$

2. Cost of 1 toy = ₹68.70                       $68 \cdot 70$   
 Cost of 2 toys = ₹68.70 × 2                       $\times 2$   
 = ₹137.40                       $\underline{137 \cdot 40}$

- Cost of 1 battery = ₹19.85       $19 \cdot 85$   
 Cost of 2 batteries = ₹19.85 × 2       $\begin{array}{r} \times 2 \\ \hline 39 \cdot 70 \end{array}$
3. Cost of 7 softies = ₹129.50  
 Cost of 1 softy = ₹(129.50 ÷ 7)  
 = ₹18.50
4. Bread bought by Liza = ₹8.50  
 Slab of butter bought by Liza = ₹15.70  
 Biscuits bought by Liza = ₹4.25  
 Total money paid by Liza = ₹(8.50 + 15.70 + 4.25)  
 = ₹28.45
5. Cost of water colour box = ₹59.75  
 Money given to the salesman = ₹50 + ₹20  
 Money returned by shopkeeper = ₹(70 - 59.75)  
 = ₹10.25
6. Cost of 1 packet of matchstick = ₹12.85  
 Cost of 4 packets of matchstick = ₹4 × 12.85  
 = ₹51.40
7. Cost of 5 raincoats = ₹978.50  
 Cost of 1 raincoat = (978.50 ÷ 5)  
 = ₹195.70
8. Money with Sakshi = ₹126.75  
 Sakshi has 26.75 more than ₹10.
9. Cost of lipstick = ₹22.70  
 Cost of face powder = ₹24.78  
 Cost of rubber band = ₹6.50  
 Total money with Guddy = ₹50  
 ₹(50 - 22.70 - 24.78 - 6.50)  
 No money with Guddy is not enough. She needs ₹3.98 more.
10. Cost of 1 litre of kerosene oil = ₹20.80  
 Cost of 4 litre of kerosene oil = ₹20.80 × 4  
 = ₹83.20

$$\begin{array}{r} 18.50 \\ 7 \overline{)129.50} \\ \underline{-70} \phantom{0} \\ 59 \phantom{0} \\ \underline{-56} \phantom{0} \\ 35 \\ \underline{-35} \\ 0 \end{array}$$

$$\begin{array}{r} \textcircled{1} \\ \textcircled{1} 8 \cdot 50 \\ 15 \cdot 70 \\ + 4 \cdot 25 \\ \hline 28 \cdot 45 \end{array}$$

$$\begin{array}{r} \textcircled{6} \textcircled{9} \textcircled{11} \textcircled{10} \\ \cancel{70} \cdot \cancel{00} \\ \underline{-59 \cdot 75} \\ 10 \cdot 25 \end{array}$$

$$\begin{array}{r} \textcircled{3} \textcircled{2} \\ 12 \cdot 85 \\ \times 4 \\ \hline 51 \cdot 40 \end{array}$$

$$\begin{array}{r} 195.70 \\ 5 \overline{)978.50} \\ \underline{-50} \phantom{0} \\ 47 \phantom{0} \\ \underline{-45} \phantom{0} \\ 28 \\ \underline{-25} \\ 35 \\ \underline{-35} \\ 0 \end{array}$$

$$\begin{array}{r} 126 \cdot 75 \\ \underline{-100 \cdot 00} \\ 26 \cdot 75 \end{array}$$

$$\begin{array}{r} 50 \cdot 00 \\ 22 \cdot 70 \\ -24 \cdot 78 \\ \hline 6 \cdot 50 \\ \underline{-6 \cdot 50} \\ 3 \cdot 98 \end{array}$$

$$\begin{array}{r} \textcircled{3} \\ 20 \cdot 80 \\ \times 4 \\ \hline 83 \cdot 20 \end{array}$$

### Exercise 11.3

Tick (✓) the correct answer :

1. (b)    2. (a)    3. (b)    4. (c)    5. (a)

## Chapter-12 (Unitary Method)

### Exercise 12.1

1. Weight of six bags = 120 kg  
Weight of one bag =  $120 \div 6$   
= 20 kg
- $$\begin{array}{r} 20 \\ 6 \overline{) 120} \\ \underline{-120} \\ 0 \end{array}$$
2. Lace used by Sandra to make one dress = 4 m  
Lace used by Sandra to make 12 such dresses  
=  $12 \times 4$   
= 48 m
- $$\begin{array}{r} 12 \\ \times 4 \\ \hline 48 \end{array}$$
3. Cost of 12 eggs = ₹ 36  
Cost of 1 egg =  $36 \div 12$   
= ₹ 3
- $$\begin{array}{r} 3 \\ 12 \overline{) 36} \\ \underline{-36} \\ 0 \end{array}$$
- Cost of 18 eggs = ₹  $(18 \times 3)$   
= ₹ 54
- $$\begin{array}{r} \textcircled{3} \\ 18 \\ \times 3 \\ \hline 54 \end{array}$$
4. Cost of 4 bus tickets = ₹ 720  
Cost of 1 bus ticket = ₹  $(720 \div 4)$   
= ₹ 180  
Cost of 10 tickets = ₹  $(10 \times 180)$   
= ₹ 1800
- $$\begin{array}{r} 180 \\ 7 \overline{) 720} \\ \underline{-4} \downarrow \\ 32 \\ \underline{32} \\ 0 \end{array}$$
5. Distance covered in 3 hours = 24 km  
Distance covered in 1 hour =  $24 \div 3$   
= 8 km  
Distance covered in 5 hours =  $(8 \times 5) = 40$  km
- $$\begin{array}{r} 8 \\ 3 \overline{) 24} \\ \underline{-24} \\ 0 \end{array}$$
6. Bicycles made in 7 days = 3500  
Bicycles made in 1 day =  $3500 \div 7$   
= 500  
∴ Total bicycles in 30 days =  $500 \times 30 = 15000$
- $$\begin{array}{r} 500 \\ 7 \overline{) 3500} \\ \underline{-35} \downarrow \downarrow \\ 000 \end{array}$$
7. Cloth used to make 4 curtains = 12 m  
Cloth used to make 1 curtain =  $12 \div 4 = 3$  m  
Cloth used to make 10 curtains =  $10 \times 3$   
= 30 m

$$\begin{array}{r}
 250 \\
 20 \overline{) 5000} \\
 \underline{-400} \\
 100 \\
 \underline{-100} \\
 0
 \end{array}$$

8. Bags carried by 20 truck = 5000  
 Bags carried by 1 truck =  $5000 \div 20$   
 = 250 bags

Bags carried by 5 truck =  $250 \times 5$   
 = 1250 bags

$$\begin{array}{r}
 250 \\
 \times 5 \\
 \hline
 1250
 \end{array}$$

### Test Paper-III

- Look at the pattern and add using a shortcut :  
 (a)  $7 \times (7 + 1) = 7 \times 8 = \frac{56}{2} = 28$     (b)  $8 \times (8 + 1) = 8 \times 9 = \frac{72}{2} = 36$ .
- Change in decimal notation :  
 (a) 0.3                      (b) 3.8                      (c) 3.5                      (d) 0.52  
 (e) 0.523                    (f) 3.12
- Cost of 1 match box = ₹ 14.56  
 Cost of 5 packets =  $5 \times 14.56$   
 = ₹ 72.80
$$\begin{array}{r}
 14 \cdot 56 \\
 \times 5 \\
 \hline
 72 \cdot 80
 \end{array}$$
- Cost of 5 tickets = ₹ 800  
 Cost of 1 ticket =  $\frac{800}{5} = 160$   
 Cost of 10 tickets =  $160 \times 10 = ₹ 1600$
- No. of screws produced in 2 days = 2050  
 Screws produced in 1 day =  $\frac{2050}{2} = 1025$   
 Screws produced in 15 days =  $15 \times 1025$   
 = 15375
$$\begin{array}{r}
 1025 \\
 \times 15 \\
 \hline
 5125 \\
 10250 \\
 \hline
 15375
 \end{array}$$
- Fill in the blanks :  
 (a)  $444 \div \boxed{12} = 37$                       (b) The place value of 3 =  $\boxed{300}$   
 (c) 9 paise =  $\boxed{0.09}$  Rupee              (d) 14 cm =  $\boxed{0.14}$  m  
 (e) 18 L =  $\boxed{18000}$  mL
- Tick (✓) the correct answer :  
 (a) ii (b) i (c) iii (d) ii (e) iii

## Chapter-14 (Measurement in Metric System)

### Exercise 13.1

- Do it yourself.

2. Match the most likely weight :
- (a) Sack of rice = 5 kg  
 (b) Loaf of bread = 25 g  
 (c) Encyclopedia = 2 kg  
 (d) Strips of tablets = 5 g
3. Fill in the blanks with cm, m or km:
- (a) The distance from home to the airport 6 km  
 (b) The height of sauce bottle 5 cm  
 (c) The width of shirt button 6.5 cm  
 (d) The length of the wall behind the school building 8 m
4. Ring the closest measure :
- (a) Water in storage tank 1000 l  
 (b) Oil in a can 5 l  
 (c) Milk in a cat's bowl 100 ml  
 (d) Juice in a bottle 1 l

### Exercise 13.2

1. Fill in the blanks with correct answers :
- (a) 5 m = 500 cm  
 (b) 24 m 8 cm = 2408 cm  
 (c) 7 km = 7000 m  
 (d) 37 km = 37000 m  
 (e) 2 km 264 m = 2264 cm
2. Convert :
- (a) 95 mm into cm and mm  
 $10 \text{ mm} = 1 \text{ cm}$   
 $90 \text{ mm} = 9 \text{ cm}$   
 $95 \text{ mm} = 9 \text{ cm } 5 \text{ mm}$
- (b) 9 m 62 cm into cm  
 $1 \text{ m} = 100 \text{ cm}$   
 $9 \text{ m} = 9 \times 100$   
 $= 900 \text{ cm} + 62 \text{ cm}$   
 $= 962 \text{ cm}$
- (c) 5009 cm into m and cm  
 $5000 \text{ cm} + 9 \text{ cm}$   
 $\frac{5000}{100} + 9 \text{ cm}$   
 $50 \text{ m} + 9 \text{ cm}$   
 $= 50 \text{ m } 9 \text{ cm}$
- (d) 7065 m into km and m  
 $7000 \text{ m} + 65 \text{ m}$   
 $1 \text{ m} = \frac{1}{1000} \text{ km}$   
 $\frac{7000}{1000} \text{ km} + 65 \text{ m}$   
 $= 7 \text{ km} + 65 \text{ m}$   
 $= 7 \text{ km } 65 \text{ m.}$

### Exercise 13.3

1. Find the weight in g :

(a) 0.820 kg

$$1 \text{ kg} = 1000 \text{ g}$$

$$0.820 \text{ kg} = 0.820 \times 1000$$

$$= 820 \text{ g}$$

(c) 0.345 kg

$$1 \text{ kg} = 1000 \text{ g}$$

$$0.345 \text{ kg} = \frac{0.345}{1000} \times 1000$$

$$= 345 \text{ g}$$

(b) 5.05 kg

$$1 \text{ kg} = 1000 \text{ g}$$

$$5.05 \text{ kg} = \frac{505}{100} \times 1000$$

$$= 5050 \text{ g}$$

(d) 11.75 kg

$$1 \text{ kg} = 1000 \text{ g}$$

$$11.75 \text{ kg} = \frac{1175}{100} \times 1000$$

$$= 11750 \text{ g}$$

2. Find the weight in kg :

(a) 22395 g

$$1 \text{ g} = \frac{1}{1000} \text{ kg}$$

$$22395 \text{ g} = \frac{22395}{1000} \text{ kg}$$

$$= 22.395 \text{ kg}$$

(b) 1976 g

$$1 \text{ g} = \frac{1}{1000} \text{ kg}$$

$$1976 \text{ g} = \frac{1976}{1000} \text{ kg}$$

$$= 1.976 \text{ kg}$$

(c) 80008 g

$$= 80000 \text{ g} + 8 \text{ g}$$

$$= 80 \text{ kg} + 8 \text{ g}$$

$$= 80.008 \text{ kg}$$

(d) 25700 g

$$1 \text{ g} = \frac{1}{1000} \text{ kg}$$

$$25700 \text{ g} = \frac{25700}{1000} \text{ kg}$$

$$= 25.700 \text{ kg}$$

3. Convert :

(a) 11008 g into kg and g

$$11000 \text{ g} + 8 \text{ g}$$

$$\frac{11000}{1000} \text{ kg} + 8 \text{ g}$$

$$11 \text{ kg and } 8 \text{ g}$$

(c) 1055 g into kg and g

$$1000 \text{ g} + 55 \text{ g}$$

$$\frac{1000}{1000} \text{ kg} + 55 \text{ g}$$

$$1 \text{ kg and } 55 \text{ g}$$

(b) 8045 g into kg and g

$$8000 \text{ g} + 45 \text{ g}$$

$$\frac{8000}{1000} \text{ kg} + 45 \text{ g}$$

$$8 \text{ kg and } 45 \text{ g}$$

(d) 1275 g into kg and g

$$1000 \text{ g} + 275 \text{ g}$$

$$\frac{1000}{1000} \text{ kg} + 275 \text{ g}$$

$$1 \text{ kg and } 275 \text{ g.}$$

### Exercise 13.4

1. Convert the following into ml :

(a)  $5.128 \text{ l} = \frac{5128}{1000} \times 1000 = 5128 \text{ ml}$

$$(b) 5.009 \text{ l} = \frac{5009}{1000} \times 1000 = 5009 \text{ ml}$$

$$(c) 5 \text{ l } 30 \text{ ml} = 5 \times 1000 + 30 \text{ ml} = 5030 \text{ ml}$$

$$(d) 3 \text{ l } 110 \text{ ml} = 3 \times 1000 + 110 \text{ ml} = 3110 \text{ ml}$$

2. Convert the following into l :

$$(a) 7 \text{ l } 230 \text{ ml} = \frac{7230}{1000} \times 1000 = 7.230 \text{ l}$$

$$(b) 5 \text{ l } 5 \text{ ml} = 5 \frac{5}{100} \times = 5.005 \text{ l}$$

$$(c) 5030 \text{ ml} = \frac{5030}{1000} = 5.030 \text{ l}$$

$$(d) 4350 \text{ ml} = \frac{4350}{1000} = 4.350 \text{ l}$$

3. Milk from one dairy = 4.685 l

Milk from another dairy = 5.465 l

Total Milk she brought in all = 10.150 l.

4. Total oil = 4.270 l

Oil left = 3.940 l

Spilled oil = 0.330 l or 330 ml.

5. Glycerine in 7 containers = 10.360 l

Glycerine in 1 container =  $10.360 \div 7 = 1.480 \text{ l}$

### Exercise 13.5

Tick (✓) the correct answer :

1. (b) 12 g + 1000 g = 1012 g      2. (c)      3. (c)      4. (b)      5. (b)

## Chapter-14 (Time)

### Exercise 14.1

1. Write the time shown by each clock in both number and words :

(a) Half past seven

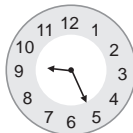
(b) Quarter past twelve

(c) Quarter past six

(d) Quarter to two

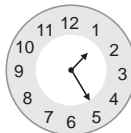
2. Show the correct time :

(a)



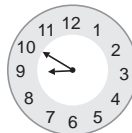
9 : 27

(b)



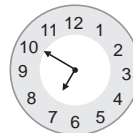
1 : 25

(c)



9 : 50

(d)



6 : 50

3. Write the time in number :

(a) 5 minutes past 7 = 7 : 05

(b) Quarter to 11 = 10 : 45

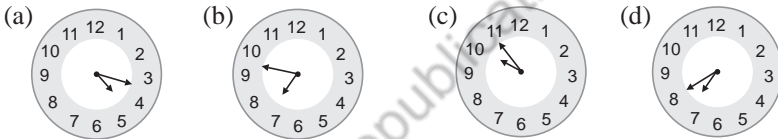
(c) 5 minutes to 6 = 5 : 55

(d) 25 minutes past 10 = 10 : 25

4. Find the minutes :
- (a) 4 hours = 240 minutes                      (b) 6 hours = 360 minutes  
 (c) 12 hours = 720 minutes                      (d) 9 hours = 540 minutes
5. Write the time in words :
- (a) 11 : 05 = Five minutes past 11                      (b) 2 : 20 = Twenty minutes past 2  
 (c) 3 : 30 = Half past 3                      (d) 6 : 50 = 50 minutes past 6
6. Fill in the blanks :
- (a) Monday is first day of a week.  
 (b) Months have 30 days 4.  
 (c) In leap year February has 29 days.  
 (d) December is the last month of the year.  
 (e) The months of July and August come after one another which have 31 days each.

### Exercise 14.2

1. Write the time to the exact minute :
- (a) 12 : 03                      (b) 8 : 23                      (c) 10 : 45                      (d) 1 : 25
2. Draw the hand to show the given time :



3. Write the times as shows :
- (a) Quarter to eight                      (b) Quarter to 1  
 (c) Quarter to 7                      (d) 9 o' clock

### Exercise 14.3

1. Fill in the blanks with a.m or p.m :
- (a) am    (b) am    (c) am    (d) pm    (e) pm    (f) pm
2. How much time has passed :
- (a) 15 minutes                      (b) 12 minutes
3. How many hours are there :
- (a) 17 hours                      (b) 7 hours                      (c) 2 hours                      (d) 6 hours

### Exercise 14.4

1. What time, a.m or p.m are, these watches showing?
- (a) pm                      (b) am  
 (c) am                      (d) am
2. Change the following into 24 hours clock time :
- (a) 8 : 40 pm                      (b) 11 : 25 pm                      (c) 5 : 50 am  
 $12 + 8 = 20$                        $12 + 11 = 23$                       05 : 50 hours  
 20 : 40 hours                      23 : 25 hours



4. Change into days and hours :

(a) 40 hours

$$\begin{array}{r} 1 \\ 24 \overline{) 40} \\ \underline{-24} \\ 16 \end{array}$$

1 day 16 hours

(c) 190 hours

$$\begin{array}{r} 7 \\ 24 \overline{) 190} \\ \underline{-168} \\ 22 \end{array}$$

7 days 22 hours

(b) 230 hours

$$\begin{array}{r} 9 \\ 24 \overline{) 230} \\ \underline{-216} \\ 14 \end{array}$$

9 days 14 hours

(d) 300 hours

$$\begin{array}{r} 12 \\ 24 \overline{) 300} \\ \underline{-24} \\ 60 \\ \underline{-48} \\ 12 \end{array}$$

12 days 12 hours

5. Change into hours and minutes :

(a) 70 minutes

60 minutes + 10 minutes  
1 hour 10 minutes

(c) 283 minutes

240 + 43 minutes  
4 hours 43 minutes

(b) 120 minutes

2 hours 0 minutes

(d) 310 minutes

300 + 10  
5 hrs + 10 min.  
5 hours 10 min.

6. Change into minutes and seconds :

(a) 140 seconds

1 min = 60 seconds  
120 seconds + 20 seconds  
2 minutes 20 seconds

(c) 268 seconds

1 min = 60 seconds  
240 seconds + 28 seconds  
4 minutes 28 seconds

(b) 155 seconds

1 min = 60 seconds  
120 seconds + 35 seconds  
2 minutes 35 seconds

(d) 389 seconds

1 min = 60 seconds  
360 seconds + 29 seconds  
6 minutes 29 seconds

**Exercise 14.6**

1. Add :

(a) 
$$\begin{array}{r} 5 \quad 2 \quad 5 \\ + 3 \quad 5 \quad 5 \\ \hline 8 \text{ h } 8 \text{ 0 min} = 9 \text{ h } 20 \text{ min.} \end{array}$$

(d) 
$$\begin{array}{r} 3 \quad 2 \quad 9 \\ + 2 \quad 5 \quad 9 \\ \hline 5 \text{ h } 8 \text{ 8 min} = 6 \text{ h } 88 \text{ min.} \end{array}$$

(c) 
$$\begin{array}{r} 6 \quad 4 \quad 5 \\ + 8 \quad 3 \quad 2 \\ \hline 14 \text{ h } 7 \quad 7 \text{ min} = 15 \text{ h } 17 \text{ min.} \end{array}$$

(e) 
$$\begin{array}{r} 7 \quad 2 \quad 8 \\ + 9 \quad 4 \quad 6 \\ \hline 16 \text{ h } 7 \quad 4 \text{ min} = 17 \text{ h } 14 \text{ min.} \end{array}$$

2. Subtract :

$$\begin{array}{r} \textcircled{1} \quad \textcircled{120} \\ \cancel{2} \quad 2 \quad 0 \\ - \quad 4 \quad 6 \\ \hline 1 \text{ h } 7 \quad 4 \text{ min} \end{array}$$

$$\begin{array}{r} \textcircled{2} \quad \textcircled{12} \\ 1 \quad \cancel{2} \quad 7 \\ - \quad 6 \quad 4 \quad 6 \\ \hline 6 \text{ h } 8 \quad 1 \text{ min} \end{array}$$

$$\begin{array}{r} \textcircled{3} \quad \textcircled{4} \quad \textcircled{5} \\ 4 \quad 3 \quad 5 \\ - \quad 1 \quad 2 \quad 8 \\ \hline 3 \text{ h } 7 \text{ min} \end{array}$$

$$\begin{array}{r} \textcircled{4} \quad \textcircled{11} \\ \cancel{2} \quad 1 \quad 0 \\ - \quad 3 \quad 4 \quad 4 \\ \hline 1 \text{ h } 7 \quad 0 \text{ min} \end{array}$$

3. 9 : 30 p.m

$$- 3 \text{ hours} = 6 : 30 \text{ p.m}$$

$$6 : 30 \text{ p.m} - 36 \text{ min} = 5 : 54 \text{ min}$$

4. Malika boarded a bus = 6 : 55 p. m

$$\text{Left it} = 11 : 10 \text{ p. m}$$

$$(11 : 10 - 6 : 55) = 4\text{h } 15 \text{ min}$$

$$\text{She was in the train} = 4 \text{ hours } 15 \text{ minutes.}$$

5. 4 : 50 a.m + 5 hrs = 9 : 50 a.m

$$9 : 50 \text{ a.m} + 45 \text{ min} = 10 : 35 \text{ a.m}$$

6. Marry reached to school = 7 : 45 a.m

$$\text{She started} = 7 : 15 \text{ a.m}$$

$$\text{She took time to reach school} = (7 : 45 - 7 : 15) = 30 \text{ min.}$$

7. Film started = 2 : 45 p.m

$$\text{Film ended} = 6 : 20 \text{ p.m}$$

$$\text{Duration of the film} = 6 : 20 - 2 : 45 = 3 \text{ h } 35 \text{ min.}$$

8. Too off at = 1230 hrs

$$\text{Landed after} = 3 \text{ hrs } 50 \text{ min}$$

$$\text{Time of Landing} = 4 : 20 \text{ pm or } 16 \text{ } 20 \text{ hrs.}$$

9. Time of Quiz = 1 h 30 min

$$\text{Time of Advertisement} = 26 \text{ min}$$

$$\text{The Quiz take} = 1\text{h } 30 \text{ min}$$

$$= 1 \text{ h } 30 \text{ min}$$

10. Maths studied = 1 h 15 min

$$\text{English studied} = 1 \text{ h } 35 \text{ min}$$

$$\text{She studied} = 2 \text{ h } 50 \text{ min.}$$

### Exercise 14.7

- 4 months have 30 days  
April                      June                      September                      November
- If first Thursday fall on date 2nd the second Thursday fall on date 9th.
- There is only one month having 28/29 days and that is February.
- 7 months have 31 days and those are :  
January                      March  
May                      July  
August                      October
- 1988, 2100, 2004, 1876, 2400, 1900, 2020 are the leap years.  
2015, 2004 are not leap year.
- (a) 30 days                      (b) 8 days  
28 days + 2 days                      7 days + 1 day  
4 weeks 2 days                      1 week = 7 days  
1 week 1 day  
(c) 20 days                      (d) 31 days  
14 days + 6 days                      28 days + 3 days  
2 weeks 6 days                      4 weeks + 3 days
- The world cup match started = 7<sup>th</sup> October  
The World cup match ended = 7<sup>th</sup> November  
= [ 25 + 7 ] days  
The world cup match continues for = 32 days.
- Stay at Delhi = 8 days                      Stay at Dehradun = 11 days  
Stay at Mussorie = 4 days  
(8 + 11 + 4) days = 23 days  
21 days + 2 days    3 weeks 2 days
- Neha joined course = 5 th march    Course attended = 4 week  
The course in completed on 2nd April.
- Age of Aman = 4 yr 8 months  
Age of Dolly = 3 yr 6 months  
Dolly is 1 yr 2 months older than Aman.

### Exercise 14.8

- Tick (✓) the correct answer :  
(b) 2. (b)    3. (c)    4. (a)    5. (c)

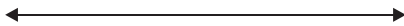
## Chapter-15 (Lines and Shapes)

### Exercise 15.1

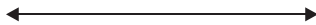
- Find the length of the line segments :  
(a) 3.4 cm                      (b) 3 cm                      (c) 4 cm                      (d) 2.5 cm

2. Draw the line segment of length :

(a) 9.3 cm



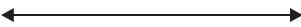
(b) 4.6 cm



(c) 3.8 cm



(d) 4 cm 5 mm

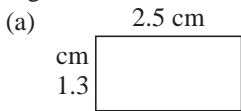


3. Find the distance between the two points :

(a) 2.9 cm

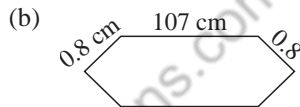
(b) 2.4 cm

4. What is the length of each line segment and also tell the number of the line segment :



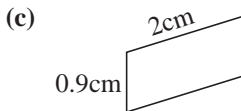
No. = 4

L = 1.3 cm, 2.5 cm



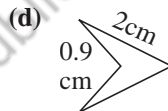
No. = 6

L = 0.8 cm, 107 cm



No. = 4

L = 0.9 cm, 2 cm



No. = 4

L = 0.9 cm, 2 cm

### Exercise 15.2

1. Fill in the blanks :

(a) dot

(b) only one

(c) ray

(d) right

(e) protactor

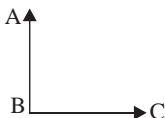
(f) quarter

(g) more, less

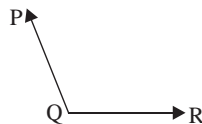
(h) more, less

2. Name each angle in both ways :

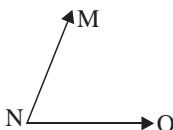
(a) Right Angled triangle



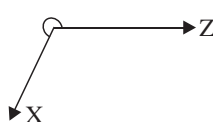
(b) Obtuse angle



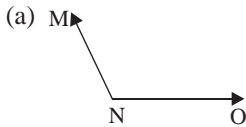
(c) Acute angle



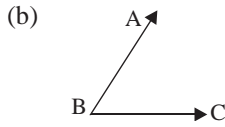
(d) Reflex angle



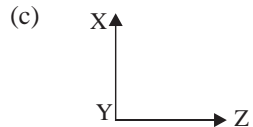
3. Name the vertex and side of each angle :



Vertex = N  
Side = MN, NO



Vertex = B  
Side = AB, BC



Vertex = Y  
Sides = XY, YZ

4. Write the kind of each angle :

(a)  $170^\circ$  = Obtuse

(b)  $90^\circ$  = Right

(c)  $79^\circ$  = Acute

(d)  $175^\circ$  = Obtuse

(e)  $181^\circ$  = Reflex

(f)  $65^\circ$  = Acute

(g)  $91^\circ$  = Obtuse

(h)  $100^\circ$  = Obtuse

5. Put the sign  $>$ ,  $=$  or  $<$  in the boxes :

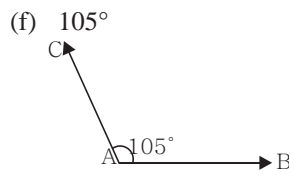
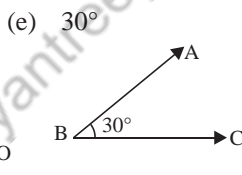
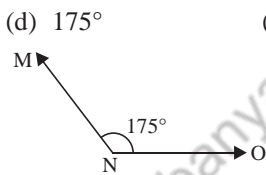
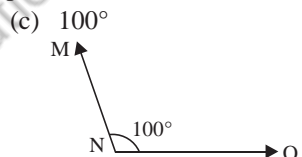
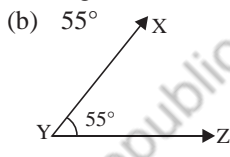
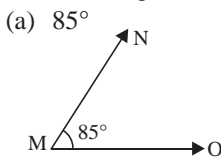
(a) An acute angle  $\square$   $90^\circ$

(b) An obtuse angle  $\square$   $180^\circ$

(c) A straight angle  $\square$   $180^\circ$

(d) An obtuse angle  $\square$  an acute angle

6. Draw the angle of the following measure with a protractor :



## Chapter-16 (Shapes, Symmetry and Patterns)

### Exercise 16.1

1. Fill in the blanks :

(a) two      (b) edge      (c) 3      (d) cylinder

(e) no, no      (f) sphere      (g) sphere

2. Match the following :

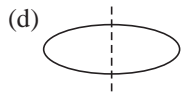
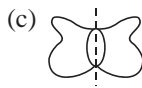
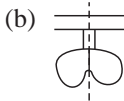
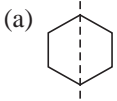
(a) 2 flat faces and 1 curved face      (iv)

(b) 6 flat faces      (iii)

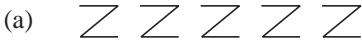
(c) 1 flat face and 1 curved      (ii)

(d) Only 1 curved face      (i)

3. Draw the lines of symmetry :

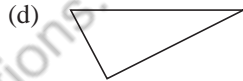
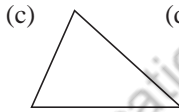
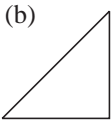
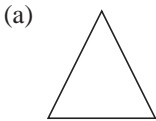


4. Observe the pattern and draw the next :

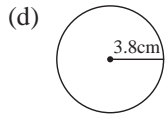
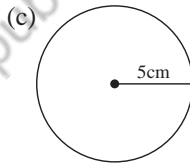
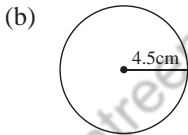
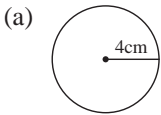


### Exercise 16.2

1. Measure all sides : (Do it yourself)



2. Use your compass to draw a circle of radius :



3. What is the diameter of each of the circles whose radius is :

(a)  $6 \text{ cm} = 12 \text{ cm}$

(b)  $7 \text{ cm} = 14 \text{ cm}$

(c)  $4 \text{ cm} = 8 \text{ cm}$

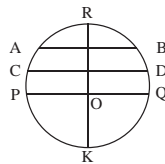
(d)  $2 \text{ cm} = 4 \text{ cm}$

4. In the figure on the right, O is the centre of the circle. Name all :

(a) Radii of the circle = OR, OP, OQ, OK

(b) Diameter of the circle = PQ, RK

(c) Chord of the circle = AB, CD

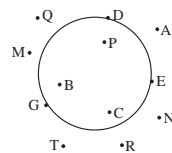


5. In the figure which of the points are :

(a) In the interior of the circle = B, C, P

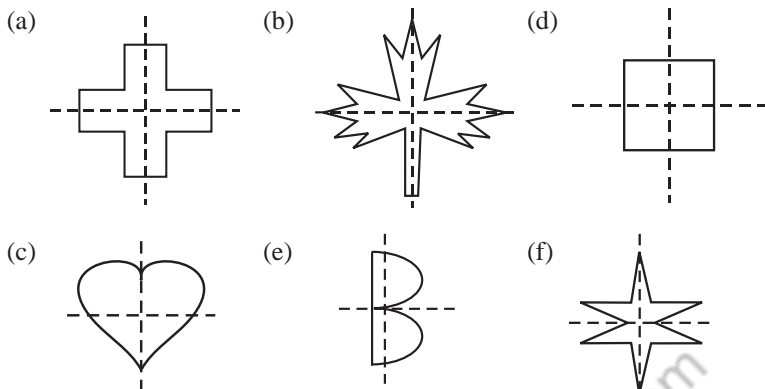
(b) In the exterior of the circle = M, N, T

(c) On the circle = A, R, Q



### Exercise 16.3

1. Draw the lines of symmetry :



2. Write the number of lines of symmetry :

(a) infinite      (b) four      (c) three

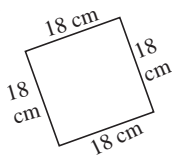
3. Do Yourself

## Chapter-17 (Perimeter)

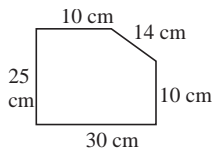
### Exercise 17.1

1. Find the perimeter :

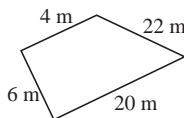
(a) Perimeter =  $(18 + 18 + 18 + 18)$   
= 72 cm



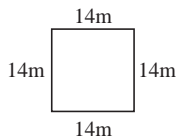
(b) Perimeter =  $(25 + 30 + 10 + 14 + 10)$  cm  
= 89 cm



(c) Perimeter =  $(4 + 6 + 20 + 22)$  m  
= 52 m



(d) Perimeter =  $(14 + 14 + 14 + 14)$   
= 56 m



2. Complete the following table of a rectangle :

(a)  $P = 360$  cm

Let length be  $x$

$$x + x + 80 + 80 = 360$$

$$2x + 160 = 360$$

$$2x = 360 - 160$$

$$2x = 200$$

$$x = \frac{200}{2}$$

$$x = 100$$

(b)  $P = 80$  cm

Let breadth be  $x$

$$x + x + 28 + 28 = 80$$

$$2x + 56 = 80$$

$$2x = 80 - 56$$

$$2x = 24$$

$$x = 12$$

3. Find the perimeter a the square having the sides as given below:

(a) 10 cm

$$\text{Perimeter} = (10 + 10 + 10 + 10) \text{ m}$$

$$\text{Perimeter} = 40 \text{ m}$$

(b) 25 cm

$$\text{Perimeter} = (25 + 25 + 25 + 25) \text{ cm}$$

$$\text{Perimeter} = 100 \text{ cm}$$

(c) 5 cm

$$\text{Perimeter} = (5 + 5 + 5 + 5) \text{ cm}$$

$$\text{Perimeter} = 20 \text{ cm}$$

(d) 15.5 cm

$$\text{Perimeter} = (15.5 + 15.5 + 15.5 + 15.5) \text{ cm}$$

$$\text{Perimeter} = 62 \text{ cm}$$

4. Find the perimeter of a rectangle whose length and breadth are given below:

(a) 12 cm, 10 cm

$$\text{Perimeter} = (12 + 10 + 12 + 10) \text{ cm}$$

$$= 44 \text{ cm}$$

(b) 10 cm, 6 cm

$$\text{Perimeter} = (10 + 6 + 10 + 6) \text{ cm}$$

$$= 32 \text{ cm}$$

(c) 5.8 cm, 4.2 cm

$$\text{Perimeter} = (5.8 + 4.2 + 5.8 + 4.2) \text{ cm}$$

$$= 20 \text{ cm}$$

(d) 5 cm, 2 cm

$$\text{Perimeter} = (5 + 2 + 5 + 2) \text{ cm}$$

$$= 14 \text{ cm}$$

5. Find the perimeter of a equilateral triangle whose sides are given below:

(a) 15 cm

$$\text{Perimeter} = (15 + 15 + 15) \text{ cm}$$

$$= 45 \text{ cm}$$

(b) 5 cm

$$\begin{aligned}\text{Perimeter} &= (5 + 5 + 5) \text{ cm} \\ &= 15 \text{ cm}\end{aligned}$$

(c) 10 cm

$$\begin{aligned}\text{Perimeter} &= (10 + 10 + 10) \text{ cm} \\ &= 30 \text{ cm}\end{aligned}$$

(d) 12.4 m

$$\text{Perimeter} = (12.4 + 12.4 + 12.4) \text{ m} = 37.2 \text{ cm}$$

6. Side of triangle = 8 cm

$$\begin{aligned}\text{Perimeter} &= (8 + 8 + 8) \text{ cm} \\ &= 24 \text{ cm}\end{aligned}$$

7. Sides of park = 45, 65, 80 m

$$\begin{aligned}\text{Perimeter} &= (45 + 65 + 80) \text{ m} \\ &= 190 \text{ m}\end{aligned}$$

$$\begin{aligned}\text{Distance covered in 5 rounds} &= 190 \times 5 \\ &= 950 \text{ m}\end{aligned}$$

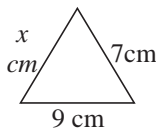
8. Perimeter = 22

$$x + 7 + 9 = 22$$

$$16 + x = 22$$

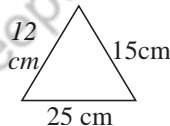
$$x = 22 - 16$$

$$x = 6 \text{ cm}$$



9. Perimeter = (12 + 15 + 25) cm

$$= 52 \text{ cm}$$



10. Frame sides = 45 cm, 25 cm

$$\begin{aligned}\text{Perimeter frame} &= (45 + 25 + 45 + 25) \text{ cm} \\ &= 140 \text{ cm}\end{aligned}$$

## Chapter-18 (Data Handling)

### Exercise 18.1

- It represents 10 cakes.
  - 50 cakes were baked on Monday.
  - On Friday, 60 cakes were baked.
  - On Saturday, maximum no. of cakes were baked.
  - We multiply no. of cakes by 10, to find the cake baked on each day.
- Cat has a longest span of life. Cat has a life of 15 years.
  - Rabbit has the shortest span of life of 5 years.
  - Cat lives 1 year more than dog.
  - Monkey lives 5 years more than Rabbit.





## Exercise 18.2

- Answer these questions :
  - Cereals forms the maximum part of a balanced diet.
  - Fruits and Sugar are required in same quantity.
  - Fats and oils forms the smallest part of diet.
  - 260 grams
  - 200 grams
- Answer the following questions:
  - New subscribers a children newspaper.
  - Years in on vertical scale on the graph.
  - In year 2008, they have 450 subscribers.
  - In 2008, they have 250 subscribers. In 2006, they have 200 subscribers.
- Answer the following questions :
  - Sumit sold more potato by weight and 5 kg.
  - Kushi sold more vegetables by 5 kg.
  - The difference between the amount they sell at the end of the second day is 15 kg.
- Answer the following questions :
  - Family spend the most on food.
  - Family spend total amount of ₹ 23000.
  - Money spend on transport is ₹ 3500.
  - Savings of the family is ₹ 2000.
- Answer the following questions :
  - Bus travelled least along the road, i.e. 375.
  - Bus travels 925 less than car.
  - Car is the vehicle which travel maximum along the road i.e. 1300.
  - Total number of vans and motorcycles along the road is 1800.
- Answer the following questions :
  - City B has the highest population in 2000 i.e. 1,60,00,000.
  - Population of A city = 1,20,00,000  
Population of B city = 1,60,00,000  
Difference =  $1,60,00,000 - 1,20,00,000$   
= 40,000
  - In city A population increases the most from 2000 to 2010.
  - City B and city A.
- Answer the following questions :
  - Tea was the most popular drink.
  - 5 types of drink were bought.
  - 220 drinks were bought altogether.
  - Coffee.

8.

Weeks	Absentes
Monday	1 ○
Tuesday	3 ○ ○ ○
Wednesday	9 ○ ○ ○ ○ ○ ○ ○ ○ ○
Thursday	0
Friday	6 ○ ○ ○ ○ ○ ○
Saturday	4 ○ ○ ○ ○

9.





Games	No. of children
Races	4 
Jumps	8 
Swimming	6 
Karate	10 

10. (a) On Wednesday least number. of tickets were sold.  
 (b) On Monday and Tuesday, same number of tickets were sold.  
 (c) On Saturday 200 more tickets were sold as compared to Friday.  
 (d) Maximum tickets were sold on Saturday i.e. 80.  
 (e) 100 more tickets were sold on Saturday as compared to Sunday.

### Test Paper-IV

1. Write the time to show :  
 (a) 5 : 45  
 (b) 8 : 10  
 (c) 6 : 45
2. Write the kind of each angle :  
 (a)  $120^\circ$  = obtuse      (b)  $90^\circ$  = Right      (c)  $58^\circ$  = Acute  
 (d)  $183^\circ$  = Reflex      (e)  $92^\circ$  = obtuse      (f)  $165^\circ$  = obtuse
3. Find the perimeter of rectangle whose length and breadth are given below:  
 (a) L = 14 cm, B = 12 cm      (b) L = 8 cm, B = 6 cm  
 $P = L \times B = 14 \times 12$        $P = L \times B = 8 \times 6$   
 $= 168$  cm       $= 48$  cm  
 (c) L = 3 cm, B = 1.5 cm      (d) L = 6.5 cm, B = 36 cm  
 $P = L \times B = 3 \times 1.5$        $P = L \times B = 6.5 \times 36$   
 $= 4.5$  cm       $= 234$  cm  
 (e) L = 10 cm, B = 14 cm      (f) L = 9 cm, B = 6 cm  
 $P = L \times B = 10 \times 14 = 140$  cm       $P = L \times B = 9 \times 6 = 54$  cm
4. Complete the following table of a rectangle :
- |     | Perimeter | Length | Breadth |
|-----|-----------|--------|---------|
| (a) | 36        | 10     | 8       |
| (b) | 80        | 28     | 12      |

5. The number of children having favourite fruits are given below :

Fruits	No. of children
Banana	5 
Mango	8 
Apple	6 
Orange	3 

6. Fill in the blanks :

- (a) Number of hours between 3 pm – 8 pm   
 (b) Number of hours between 6 am and noon   
 (c) The  is endless on one side.  
 (d) A one - fourth  $\frac{1}{4}$  or quarter rotation of ray makes  $90^\circ$  angle.

7. Tick (U) the correct answer :

- (a) (iv)      (b) (ii)                      (c) (iii)                      (d) (iv)

### Model Paper-II

1. Find the pattern and fill in the blanks :

- (d)  $444 \div 12 = 37$   
 (e)  $555 \div 15 = 37$   
 (f)  $666 \div 18 = 37$

2. Write the place value of each digits in:

- (a) 38.25                      30, 8  
 (b) 12.589                      10, 2  
 (c) 256.007                      200, 50, 6

3. Train fair for 3 persons = Rs. 1965

Train fair for 1 person =  $1965 \div 3$   
 = 655

Train fair for 2 persons =  $655 \times 2$   
 = 1310

$$\begin{array}{r} 655 \\ 3 \overline{) 1965} \\ \underline{- 18} \phantom{5} \\ 16 \\ \underline{- 15} \\ 15 \\ \underline{- 15} \\ 0 \end{array}$$

4. Weight of grapes in 1 cartoon = 5.18 g  
 Weight of grapes in 10 cartoons =  $10 \times 5.18$   
 = 51.8 kg

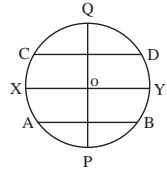
5. Write the time to the exact minute:

- (a) 12 : 10                      (b) 6 : 45                      (c) 10 : 40

6. Draw the angles of the following measures with a protractor:  
Do Yourself

7. In the given figure, O is the centre of the circle. name all :

- (a) Diameter of the circle = PQ, XY  
(b) Radii of the circle = OQ, OP, OX, OY  
(c) Chords of the circle = CD, AB



8. Find the perimeter of an equilateral triangle:  
(a)  $16 \text{ cm} = 16 + 16 + 16 = 48 \text{ cm}$   
(b)  $8 \text{ cm} = (8 + 8 + 8) \text{ cm} = 24 \text{ cm}$   
(c)  $11.4 \text{ cm} = (11.4 + 11.4 + 11.4) \text{ cm} = 34.2 \text{ cm}$

9. Fill in the blanks :

- (a) 4.422                      (b) 100

10. Tick (✓) the correct answer :

- (a) (ii)                      (b) (i)                      (c) (ii)

# Part-5

## Chapter-1 (Roman Numbers)

- Write the Hindu-Arabic numerals for the following :
  - XII = 12
  - XXIX = 29
  - XLII = 42
  - XXIV = 24
  - XXXIII = 33
  - XC = 90
  - LVI = 56
  - LXXIV = 74
  - XCV = 95
- Write the Roman numerals for the following :
  - 36 = XXXVI
  - 8 = VIII
  - 96 = XCVI
  - 78 = LXXVIII
  - 14 = XIV
  - 28 = XXVIII
  - 39 = XXXIX
  - 72 = LXXII
  - 47 = XLVII
- Write > or < :
  - X  XI
  - LX  XL
  - IV  VI
  - XLVIII  L
  - XC  LXXIX
  - C  LXXXIII
- Write the successor :
  - VI  VII
  - XII  XIII
  - XCIX  C
  - XXII  XXIII
  - IV  V
  - XC  XCI
- Write the predecessor :
  - VIII IX
  - XLIX L
  - XLVIII XLIX
  - XCIX C
  - XXVIII XXIX
  - VII VIII
- Arrange the numbers in ascending order :  
XII, LI, LII, LX
- Arrange the numbers in descending order :  
XC, LI, XL, XX
- Fill in the blanks :
  - V and L are not subtracted
  - L and D are not repeated
  - I, X and C are not repeated not more than 3 times.
  - I is subtracted only from V and X.

### Exercise 1.2

- Write the Roman numerals for the following Hindu-Arabic numerals :
  - 12 = XII
  - 16 = XVI
  - 93 = XCIII
  - 28 = XXVIII
  - 87 = LXXXVII
  - 74 = LXXIV
  - 201 = CCI
  - 488 = CDLXXXVIII
  - 982 = CMLXXXII
  - 182 = CLXXXII
  - 356 = CCCLVI
  - 876 = DCCCLXXVI
  - 105 = CV
  - 520 = DXX
  - 680 = DCLXXX
- Write the Hindu-Arabic numerals for the following Roman numerals :
  - XII = 12
  - XIV = 14
  - XLIII = 43
  - CIII = 103
  - XXVI = 26
  - XC = 95

- (g) DCC = 700                      (h) XXXIV = 34                      (i) CCXXVII = 227  
 (j) LXXI = 71                      (k) LXXXVIII = 88                      (l) CMLXV = 965  
 (m) XCIV = 94                      (n) DCLVII = 657                      (o) DCLV = 655
3. Write > or < :  
 (a) XL  $\square$  LX                      (b) L  $\square$  XLIX                      (c) XXVI  $\square$  XXIV  
 (d) CCXX  $\square$  CD                      (e) M  $\square$  CMLXXX                      (f) CXX  $\square$  CD
4. Write the predecessor :  
 (a)  $\square$  VII                      (b)  $\square$  CII                      (c)  $\square$  DXX  
 (d)  $\square$  DIII                      (e)  $\square$  DII                      (f)  $\square$  DCXXII
5. Write the successor :  
 (a) CIV  $\square$                       (b) DXX  $\square$                       (c) DIII  $\square$                       (d) DXC  $\square$                       (e) CXL  $\square$                       (f) LXXVI  $\square$
6. Fill in the blanks :  
 (a) V, L and D are never repeated.  
 (b) X is Subtracted only from L and C .  
 (c) I, X and C are repeated not more than 3 times.  
 (d) I is subtracted only from V and only X.
7. Match the following :  
 (a) CIII = (v) 103  
 (b) LX = (i) 60  
 (c) DXX = (iv) 520  
 (d) LI = (ii) 51  
 (e) CX = (iii) 110
8. Arrange in ascending order :  
 (a) XL, XLIV, LII, LX                      (b) CCC, CD, DC, DCC  
 (c) LXX, XC, CXX, CL
9. Arrange the numbers in descending order :  
 (a) LX, LI, XLIX, XL                      (b) DCC, DC, CD, CCC  
 (c) CC, CL, XC, LXXX
10. Add :  
 (a) XI + VI =  $\square$                       (b) CII + CV =  $\square$   
 (c) DX + XII =  $\square$                       (d) LIII + XIII = LX  $\square$   
 (e) DXX + XXI =  $\square$                       (f) CX + XII =  $\square$
11. Subtract :  
 (a) XX - I =  $\square$                       (b) DCC - DXX =  $\square$   
 (c) CIII - CII =  $\square$                       (d) LX - XX =  $\square$   
 (e) LIII - L =  $\square$                       (f) DCC - DC =  $\square$



- (b) Three lakh three thousand two hundred eighty-nine = 303289  
 (c) Ninety three crore forty one lakh eight hundred thirty five = 934100835  
 (d) Sixty six lakh thirty five thousand two hundred fifty eight = 6635258  
 (e) Three crore forty five lakh eighty thousand one hundred sixteen  
 = 34580116
2. Write the number names for the following :
- (a) 23,45,206 = Twenty three lakh forty five thousand two hundred six  
 (b) 9,53,28,948 = Nine crore fifty three lakh twenty eight thousand nine hundred forty eight.  
 (c) 5,00,09,866 = Five crore nine thousand eight hundred sixty six.  
 (d) 5,48,26,500 = Five crore forty eight lakh twenty six thousand five hundred.  
 (e) 43,56,93,206 = Forty three crore fifty six lakh ninety three thousand two hundred six

### Exercise 2.3

1. In which period and place of the International number system is the given digit in the given number :
- (a) 6 in 44,262,444  
 Period = Thousand Place = Ten thousands
- (b) 4 in 94,300,216  
 Period = Millions Place = One millions
- (c) 9 in 20,168,960  
 Period = Hundred Place = One Hundred
- (d) 3 in 39,201,216  
 Period = Millions Place = Ten millions
- (e) 5 in 90,210,315  
 Period = Ones Place = Ones
- (f) 2 in 63,482,100  
 Period = Thousands Place = One thousands
2. In which period and place of the Indian number system is the given digit in the given number :
- (a) 3 in 3,60,22,894  
 Period = Crore Place = One crore
- (b) 1 in 50,23,50,126  
 Period = Hundred Place = Hundreds
- (c) 5 in 56,23,402  
 Period = Lakhs Place = Ten Lakhs
- (d) 6 in 8,02,62,525  
 Period = Thousands Place = Ten thousands

- (e) 4 in 86,74,600  
Period = Thousands Place = One Thousands
- (f) 9 in 9,50,56,241  
Period = Crore Place = One Crore
3. Put commas according to Indian system:  
(a) 21,43,089      (b) 1,46,32,463      (c) 9,48,92,10,862
4. Put commas according to International system :  
(a) 4,362,189      (b) 60,963,248      (c) 921,046,521
5. Write the number names for the following numerals in the International system:
- (a) 2334687 = Two million three hundred thirty four thousand six hundred eighty seven.
- (b) 946321146 = Nine hundred forty six million three thousand twenty one thousand one hundred forty six.
- (c) 356332210 = Three hundred fifty six million three hundred thirty two thousand two hundred ten.
- (d) 10932148 = Ten million nine hundred thirty two thousand one hundred forty eight.
- (e) 552084185 = Five hundred fifty two million eighty four thousand one hundred eighty five
- (f) 605544332 = Six hundred five million five hundred forty four thousand three hundred thirty two.
6. Write the numerals for the following :
- (a) One million six hundred fifty thousand four = 1650004
- (b) Three million sixty two thousand nine hundred ninety four = 3062994
- (c) Eighty two million six hundred eighty thousand one hundred nineteen = 82680119
- (d) Five million two hundred forty two thousand one hundred seventy one = 5242171
- (e) Seventy nine million thirty six thousand five = 79036005
7. Fill in the blanks :
- (a) 100 lakhs make a crore
- (b) 100000 thousand make a million
- (c) 10 lakhs make a million
- (d) 9999999 is one less than crore
- (c) Ten millions make a crore

### Exercise 2.4

1. Write the place-value of 3 in the following numerals :
- (a) 73,28,901 = 300000      (b) 78,93,600 = 3000
- (c) 3,00,00,000 = 30000000      (d) 63,84,93,089 = 30000000, 3000



(a) 3,2,1,0,8,6,4  
 Greatest = 8643210  
 Smallest = 1023468

(b) 7,6,9,0,1,3,8  
 Greatest = 9876310  
 Smallest = 1036789

(c) 0,4,9,2,5,8,3  
 Greatest = 9854320  
 Smallest = 2034589

(d) 5,1,8,7,0,2,9  
 Greatest = 9875210  
 Smallest = 1025789

(e) 4,9,0,8,3,1,7  
 Greatest = 9874310  
 Smallest = 1034789

2. Use the given digits to build the greatest and smallest 7 digit numbers possible :

(a) 7,3,2,1  
 Greatest = 7777321  
 Smallest = 1111237

(b) 6,9,3,7  
 Greatest = 9999763  
 Smallest = 3333679

(c) 4,2,8,0  
 Greatest = 8888420  
 Smallest = 2000048

(d) 9,7,0,1  
 Greatest = 9999710  
 Smallest = 1000079

### Exercise 2.6

Tick (✓) the correct answer :

1. (b)    2. (c)    3. (d)    4. (b)    5. (b)

## Chapter-3 (Fundamental Operations)

### Exercise 3.1

1. Add :

(a) 
$$\begin{array}{r} \textcircled{1} \textcircled{1} \textcircled{1} \textcircled{1} \\ 3 \ 8 \ 7 \ 6 \ 3 \\ 2 \ 0 \ 1 \ 4 \ 2 \\ + 5 \ 1 \ 9 \ 4 \ 6 \\ \hline 1 \ 1 \ 0 \ 8 \ 5 \ 1 \end{array}$$

(b) 
$$\begin{array}{r} \textcircled{1} \textcircled{2} \\ 20198 \\ 12367 \\ + 3406 \\ \hline 35971 \end{array}$$

(c) 
$$\begin{array}{r} \textcircled{1} \textcircled{1} \textcircled{1} \\ 50943 \\ 125 \\ + 3296 \\ \hline 54364 \end{array}$$

2. Subtract :

(a) 
$$\begin{array}{r} \textcircled{1} \textcircled{14} \textcircled{5} \textcircled{13} \\ 2 \ 4 \ 8 \ 3 \ 8 \\ - 1 \ 5 \ 2 \ 9 \ 4 \\ \hline 9 \ 3 \ 4 \ 4 \end{array}$$

(b) 
$$\begin{array}{r} \textcircled{1} \textcircled{1} \textcircled{1} \textcircled{1} \\ 94632 \\ - 59378 \\ \hline 35254 \end{array}$$

(c) 
$$\begin{array}{r} 88000 \\ - 64321 \\ \hline 23679 \end{array}$$

3. Fill in the blanks :

(a)  $2,84,600 + 200 = 284800$

(b)  $35000 \div 7 = 5000$

(c)  $54730 - 1000 = 53730$

(d)  $190 \times 15 = 2850.$

(e)  $3,49,700 + 800 = 350500$

(f)  $60,000 \div 12 = 5000$

(g)  $40 \times 9000 = 360000$

(h)  $48,000 \div 8 = 6000$

4. Multiply :

$$\begin{array}{r} \textcircled{2} \\ 432 \\ \times 9 \\ \hline 3888 \end{array}$$

$$\begin{array}{r} \text{(b)} \quad 458 \\ \times 21 \\ \hline 458 \\ 916 \times \\ \hline 9618 \end{array}$$

$$\begin{array}{r} \text{(c)} \quad 9463 \\ \times 12 \\ \hline 18926 \\ 9463 \times \\ \hline 113556 \end{array}$$

$$\begin{array}{r} \text{(d)} \quad 5800 \\ \times 58 \\ \hline \textcircled{1} 46400 \\ 29000 \times \\ \hline 336400 \end{array}$$

$$\begin{array}{r} \text{(e)} \quad 2100 \\ \times 4 \\ \hline 8400 \end{array}$$

$$\begin{array}{r} \text{(f)} \quad \textcircled{4} \textcircled{2} \textcircled{1} \\ 21952 \\ \times 5 \\ \hline 109760 \end{array}$$

5. Divide :

$$\begin{array}{r} \text{(a)} \quad 7 \overline{)48763} \text{ (6966)} \\ - 42 \downarrow \downarrow \downarrow \\ \hline 67 \downarrow \downarrow \\ - 63 \downarrow \\ \hline 46 \downarrow \\ - 42 \downarrow \\ \hline 43 \\ - 42 \\ \hline 1 \end{array}$$

$$\begin{array}{r} \text{(b)} \quad 10 \overline{)50985} \text{ (5098)} \\ - 50 \downarrow \downarrow \downarrow \\ \hline 098 \downarrow \\ - 90 \downarrow \\ \hline 85 \\ - 80 \\ \hline 5 \end{array}$$

$$\begin{array}{r} \text{(c)} \quad 72 \overline{)90146} \text{ (1252)} \\ - 72 \downarrow \downarrow \downarrow \\ \hline 181 \downarrow \downarrow \\ - 144 \downarrow \\ \hline 374 \downarrow \\ - 360 \downarrow \\ \hline 146 \\ - 144 \\ \hline 2 \end{array}$$

$$\begin{array}{r} \text{(d)} \quad 36 \overline{)542356} \text{ (15065)} \\ - 36 \downarrow \downarrow \downarrow \\ \hline 182 \downarrow \downarrow \\ - 180 \downarrow \\ \hline 235 \downarrow \\ - 216 \downarrow \\ \hline 196 \\ - 180 \\ \hline 16 \end{array}$$

$$\begin{array}{r} \text{(e)} \quad 210 \overline{)842901} \text{ (4013)} \\ - 840 \downarrow \downarrow \downarrow \\ \hline 290 \downarrow \\ - 210 \downarrow \\ \hline 801 \\ - 630 \\ \hline 171 \end{array}$$

$$\begin{array}{r} \text{(f)} \quad 20 \overline{)56980} \text{ (2849)} \\ - 40 \downarrow \downarrow \downarrow \\ \hline 169 \downarrow \downarrow \\ - 160 \downarrow \\ \hline 98 \downarrow \\ - 80 \downarrow \\ \hline 180 \\ - 180 \\ \hline 0 \end{array}$$

6.	No. of people traveled on Monday	= 56,940	
	No. of people traveled on Tuesday	= 48,856	
	No. of people traveled on Wednesday	= 86,756	
	Total people traveled in 3 days	= 59640 + 48856 + 86756	
		= 192,552	$\begin{array}{r} \textcircled{2} \textcircled{2} \textcircled{1} \textcircled{1} \\ 56940 \\ + 48856 \\ + 86756 \\ \hline 192552 \end{array}$

7.	Total number of tress	= 96,890	$\begin{array}{r} \textcircled{8} \textcircled{16} \\ 96890 \\ - 58400 \\ \hline 38490 \end{array}$
	No. of apple tress	= 58,400	
	No. of banana trees	= 96,890 - 58400 =	

8.	1 Wagon can load	= 239 bags	$\begin{array}{r} 239 \overline{) 8365} \textcircled{35} \\ - 717 \downarrow \\ \hline 1195 \\ - 1195 \\ \hline 0 \end{array}$
	Total bags	= 8365 bags	
	Wagons = 8365 ÷ 239	= 35	

### Exercise 3.2

1. Add :

(a) $\begin{array}{r} \textcircled{1} \textcircled{2} \textcircled{1} \textcircled{1} \\ 843215 \\ 78912 \\ + 219034 \\ \hline 1141161 \end{array}$	(b) $\begin{array}{r} \textcircled{1} \textcircled{1} \textcircled{1} \textcircled{1} \textcircled{1} \\ 74632 \\ 109546 \\ + 565259 \\ \hline 749437 \end{array}$	(c) $\begin{array}{r} \textcircled{1} \textcircled{1} \textcircled{1} \textcircled{1} \textcircled{1} \\ 146321 \\ 328459 \\ + 564320 \\ \hline 1039100 \end{array}$
(d) $\begin{array}{r} \textcircled{1} \textcircled{1} \textcircled{1} \textcircled{1} \textcircled{2} \textcircled{1} \\ 4556381 \\ 2901295 \\ + 156546 \\ \hline 7614222 \end{array}$	(e) $\begin{array}{r} \textcircled{1} \textcircled{1} \textcircled{1} \textcircled{1} \textcircled{2} \\ 2001589 \\ 5185125 \\ + 9674328 \\ \hline 16861042 \end{array}$	(f) $\begin{array}{r} \textcircled{1} \textcircled{1} \textcircled{2} \textcircled{1} \textcircled{1} \\ 3421965 \\ 2109821 \\ + 5094638 \\ \hline 10626424 \end{array}$

2. Arrange the following numbers in column and add :

(a) $\begin{array}{r} 22421094 \\ 2156328 \\ + 19452198 \\ \hline 44029620 \end{array}$	(b) $\begin{array}{r} 57432168 \\ 20015469 \\ + 7542100 \\ \hline 84989737 \end{array}$	(c) $\begin{array}{r} 46891543 \\ 89165421 \\ + 94321784 \\ \hline 230378748 \end{array}$
---	---	---

3.	Money with Mr. Malhotra	= ₹4,28,194	$\begin{array}{r} \textcircled{1} \\ 428194 \\ + 215500 \\ \hline 643694 \end{array}$
	Money borrowed	= ₹2,15,500	
	Total cost of car	= ₹(428194 + 215500)	
		= ₹643694	

4.	Books in Library in the beginning of the month	= 24,580	$\begin{array}{r} 24580 \\ - 9540 \\ \hline 15040 \\ + 15200 \\ \hline 30240 \end{array}$
	Books that were lent	= 9540	
	Books that were brought	= 15,200	
	Books in the library at the end of the month		
	= 24580 - 9540 + 15200 = 30,240		

5.	Money spent on repairing	= ₹2,84,900	$\begin{array}{r} \textcircled{1} \textcircled{1} \textcircled{2} \textcircled{1} \\ 284900 \\ 125842 \\ + 354580 \\ \hline 765322 \end{array}$
	Money spent on painting	= ₹1,25,842	
	Money spent on furniture	= ₹3,54,580	
	Total money spend by Ronit	= ₹7,65,322	

6. Jeweller bought gold = ₹3,80,762  $\begin{array}{r} \textcircled{2} \textcircled{1} \textcircled{2} \textcircled{1} \\ 3 \ 8 \ 0 \ 7 \ 6 \ 2 \\ \textcircled{8} \ 4 \ 2 \ 5 \ 0 \ 0 \\ + \ 1 \ 8 \ 9 \ 7 \ 4 \ 2 \\ \hline 1 \ 4 \ 1 \ 3 \ 0 \ 0 \ 4 \end{array}$
- Jeweller bought diamonds = ₹8,42,500
- Jeweller bought precious stones = ₹1,89,742
- Total money jeweller spend = ₹1413004
7. Area covered by China = 92,74,000 sq. km.  $\begin{array}{r} \textcircled{1} \\ 9 \ 2 \ 7 \ 4 \ 0 \ 0 \ 0 \\ + \ 4 \ 6 \ 4 \ 2 \ 7 \ 5 \ 0 \\ \hline 1 \ 3 \ 9 \ 1 \ 6 \ 7 \ 5 \ 0 \end{array}$
- Area covered by India = 46,42,750 sq. km.
- Area covered by two countries together = 13916750
8. Difference of two number = 4,57,894  $\begin{array}{r} \textcircled{4} \textcircled{17} \quad \textcircled{8} \textcircled{14} \\ 4 \ 5 \ 7 \ 8 \ 9 \ 4 \ / \ / \\ - \ 3 \ 9 \ 2 \ 1 \ 6 \\ \hline 4 \ 1 \ 8 \ 6 \ 7 \ 8 \end{array}$
- The smaller number = 39,216
- Larger number = 4578914 – 39216
- Large number = 418678
9. Toys produced by factory in one year = 8,54,250  $\begin{array}{r} 8 \ 5 \ 4 \ 2 \ 5 \ 0 \\ + \ 3 \ 2 \ 4 \ 6 \ 1 \ 0 \\ \hline 1 \ 1 \ 7 \ 8 \ 8 \ 6 \ 0 \end{array}$
- Toys produced by factory in another year = 3,24,610
- Total toys = 854250 + 324610
- Total toys produced in two years = 1178860
10. Votes of 1st candidate = 74,25,600  $\begin{array}{r} \textcircled{2} \textcircled{1} \quad \textcircled{2} \textcircled{1} \\ 7 \ 4 \ 2 \ 5 \ 6 \ 0 \ 0 \\ 5 \ 6 \ 8 \ 0 \ 9 \ 5 \ 0 \\ 7 \ 4 \ 2 \ 5 \ 4 \ 0 \\ + \ 2 \ 4 \ 2 \ 8 \ 1 \ 8 \\ \hline 1 \ 4 \ 0 \ 9 \ 1 \ 9 \ 0 \ 8 \end{array}$
- Votes of 2nd candidate = 56,80,950
- Votes of 3rd candidate = 7,42,540
- Votes that were not polled = 242818
- Total votes =

### Exercise 3.3

1. Subtract :

(a)  $\begin{array}{r} \textcircled{6} \textcircled{9} \textcircled{13} \textcircled{12} \textcircled{7} \textcircled{9} \textcircled{11} \\ 7 \ 8 \ 4 \ 2 \ 8 \ 8 \ 1 \\ - \ 2 \ 9 \ 7 \ 8 \ 2 \ 9 \ 7 \\ \hline 4 \ 0 \ 6 \ 4 \ 5 \ 0 \ 4 \end{array}$

(b)  $\begin{array}{r} \textcircled{3} \textcircled{12} \textcircled{7} \textcircled{14} \textcircled{10} \\ 3 \ 5 \ 4 \ 2 \ 8 \ 8 \ 8 \\ - \ 2 \ 6 \ 2 \ 6 \ 7 \ 9 \ 2 \\ \hline 9 \ 1 \ 6 \ 0 \ 5 \ 8 \end{array}$

(c)  $\begin{array}{r} \textcircled{3} \textcircled{10} \quad \textcircled{6} \textcircled{11} \textcircled{11} \\ 9 \ 4 \ 0 \ 8 \ 7 \ 2 \ 1 \ / \ / \\ - \ 5 \ 2 \ 5 \ 4 \ 6 \ 7 \ 9 \\ \hline 4 \ 1 \ 5 \ 4 \ 0 \ 4 \ 2 \end{array}$

2. Simplify :

(a)  $\begin{array}{r} 6 \ 2 \ 4 \ 3 \ 2 \ 1 \ 0 \\ + \ 2 \ 4 \ 1 \ 0 \ 7 \ 4 \\ \hline 6 \ 4 \ 8 \ 4 \ 2 \ 8 \ 4 \\ - \ 3 \ 2 \ 5 \ 4 \ 6 \ 3 \\ \hline 6 \ 1 \ 5 \ 8 \ 8 \ 2 \ 1 \end{array}$

(b)  $\begin{array}{r} \textcircled{3} \textcircled{12} \quad \textcircled{8} \textcircled{5} \textcircled{5} \\ 2 \ 9 \ 4 \ 2 \ 5 \ 9 \ 6 \ 5 \ / \ / \\ - \ 4 \ 2 \ 9 \ 3 \ 2 \ 6 \ 8 \\ \hline 2 \ 5 \ 1 \ 3 \ 2 \ 6 \ 9 \ 7 \\ - \ 2 \ 4 \ 2 \ 5 \ 4 \ 6 \ 8 \ 1 \\ \hline 0 \ 8 \ 7 \ 8 \ 0 \ 1 \ 6 \end{array}$

3. Let the number be x

$3,48,750 + x = 5,47,500$

$x = 5,47,500 - 3,48,750$

Number = 198750

= 1,98,750

$$\begin{array}{r} 5 \ 4 \ 7 \ 5 \ 0 \ 0 \\ - \ 3 \ 4 \ 8 \ 7 \ 5 \ 0 \\ \hline 1 \ 9 \ 8 \ 7 \ 5 \ 0 \end{array}$$

4. Cost of generator = ₹18,42,890 ⑧ ⑩  
 Selling cost of generator = ₹13,40,252 1 8 4 2 8 9 0  
 Loss incurred in selling = 18,42,890 – 13,40,252 - 1 3 4 0 2 5 2  
 Sonia had suffered loss on the selling = ₹502638 5 0 2 6 3 8

5. Total population of country = 19,42,35,205  
 Total number of men = 9,52,82,900 ① ①  
 Total number of women = 8,32,94,550 9 5 2 8 2 9 0 0  
 Total number of children + 8 3 2 9 4 5 5 0  
 = 19,42,35,205 – 178577450 = 15657755. 1 7 8 5 7 7 4 5 0

6. Cost of land = ₹9,23,750  
 Money spent on land to build house = ₹18,32,850  
 Total cost to build a house = 9 2 3 7 5 0  
+ 1 8 3 2 8 5 0  
2 7 5 6 6 0 0

Selling price of house = ₹32,00,000

Gain = 32,00,000 – 2756600  
3 2 0 0 0 0 0  
- 2 7 5 6 6 0 0  
4 4 3 4 0 0

Total money gain = ₹443400

7. Let the number subtracted be x  
 8,93,645 + 6,35,489 – x = 10,00,000  
 1529134 – x = 10,00,000  
 x = 10,00,000 – 1529134 = 529134  
 ∴ 529134 must be subtracted to get 10,00,000.

### Exercise 3.4

1. Multiply :

(a) 
$$\begin{array}{r} 500 \\ \times 12 \\ \hline 1000 \\ 500 \times \\ \hline 6000 \end{array}$$

(b) 
$$\begin{array}{r} 900 \\ \times 80 \\ \hline 000 \\ 7200 \times \\ \hline 72000 \end{array}$$

(c) 
$$\begin{array}{r} 900 \\ \times 26 \\ \hline ① 5400 \\ 1800 \times \\ \hline 23400 \end{array}$$

(d) 
$$\begin{array}{r} 6000 \\ \times 120 \\ \hline 000 \\ 12000 \times \\ 6000 \times \times \\ \hline 720000 \end{array}$$

(e) 
$$\begin{array}{r} 1400 \\ \times 100 \\ \hline 0000 \\ 0000 \times \\ 1400 \times \times \\ \hline 140000 \end{array}$$

(f) 
$$\begin{array}{r} 2492 \\ \times 4568 \\ \hline 19936 \\ 14952 \times \\ 12460 \times \times \\ 9968 \times \times \times \\ \hline 11383456 \end{array}$$

$$\begin{array}{r} \text{(g)} \quad 1000 \\ \times 109 \\ \hline 9000 \\ 0000 \times \\ \hline 1000 \times \times \\ \hline 109000 \end{array}$$

$$\begin{array}{r} \text{(h)} \quad 2000 \\ \times 50 \\ \hline 0000 \\ 10000 \times \\ \hline 100000 \end{array}$$

$$\begin{array}{r} \text{(i)} \quad 256 \\ \times 149 \\ \hline 2304 \\ 1024 \times \\ \hline 256 \times \times \\ \hline 38144 \end{array}$$

$$\begin{array}{r} \text{(j)} \quad 4215 \\ \times 5892 \\ \hline 8430 \\ 37935 \times \\ 33720 \times \times \\ \hline 21075 \times \times \times \\ \hline 24834780 \end{array}$$

$$\begin{array}{r} \text{(k)} \quad 19000 \\ \times 430 \\ \hline 00000 \\ 57000 \times \\ 76000 \times \times \\ \hline 8170000 \end{array}$$

$$\begin{array}{r} \text{(l)} \quad 8058 \\ \times 964 \\ \hline 32222 \\ 48348 \times \\ 72522 \times \times \\ \hline 7767902 \end{array}$$

2. Screws manufactures in 1 day = 4258  
Screws manufactures in 365 days =  $4258 \times 365$

$$\begin{array}{r} 4258 \\ \times 365 \\ \hline 21290 \\ 25548 \times \\ 12774 \times \times \\ \hline 1554170 \end{array}$$

1554170 Screws are manufactures by machine in 365 days.

3. Total floors in building = 75  
Windows in each floor = 34  
Total number of windows in building =  $34 \times 75 = 2550$

$$\begin{array}{r} 75 \\ \times 34 \\ \hline 300 \\ 225 \times \\ \hline 2550 \end{array}$$

- Total bulbs to decorate one window = 60  
Bulbs required to decorate 2550 windows =  $2550 \times 60$

$$\begin{array}{r} 2550 \\ \times 60 \\ \hline 0000 \\ 15300 \times \\ \hline 153000 \end{array}$$

Total bulbs required to decorate 2550 windows = 153000

4. The price of one book = ₹258  
The price of 230 book =  $258 \times 230 = ₹59340$

$$\begin{array}{r} 258 \\ \times 230 \\ \hline 000 \\ 774 \times \\ 516 \times \times \\ \hline 59340 \end{array}$$

5. Space available for office at every floor = 73542  
Total floors in building = 38  
Total space for office available in building  
=  $73542 \times 38 = 2794596$  sqm.

$$\begin{array}{r} 73542 \\ \times 38 \\ \hline 588336 \\ 220626 \times \\ \hline 2794596 \end{array}$$

6. Turn taken by wheel to travel 1 kilometer = 480 times  
 Turn taken by wheel to travel 35 kilometer =  $480 \times 35$

$$\begin{array}{r} 480 \\ \times 35 \\ \hline 2400 \\ 1440 \times \\ \hline 16800 \end{array}$$

7. No. of schools took part in speed-math competition = 112  
 No. of students from each school = 56  
 Questions answered by each students = 40  
 Total no. of students from every school =  $112 \times 56$   
 Total number of questions to be checked =  $6272 \times 40 = 250880$

$$\begin{array}{r} 112 \\ \times 56 \\ \hline 672 \\ 560 \times \\ \hline 6272 \end{array}$$

$$\begin{array}{r} 6272 \\ \times 40 \\ \hline 0000 \\ 25088 \times \\ \hline 250880 \end{array}$$

### Exercise 3.5

1. Divide :

(a)  $46 \overline{) 92184} \left( 2004 \right.$

$$\begin{array}{r} 92184 \\ -92 \downarrow \downarrow \downarrow \\ \hline 0184 \\ -84 \\ \hline 0 \end{array}$$

(b)  $96 \overline{) 7488} \left( 78 \right.$

$$\begin{array}{r} 7488 \\ -672 \downarrow \\ \hline 768 \\ -768 \\ \hline 0 \end{array}$$

(c)  $46 \overline{) 92184} \left( 2004 \right.$

$$\begin{array}{r} 92184 \\ -92 \downarrow \downarrow \downarrow \\ \hline 0184 \\ -184 \\ \hline 0 \end{array}$$

(d)  $216 \overline{) 31284} \left( 144 \right.$

$$\begin{array}{r} 31284 \\ -216 \downarrow \downarrow \downarrow \\ \hline 968 \\ -864 \downarrow \\ \hline 1044 \\ -864 \\ \hline 180 \end{array}$$

(e)  $916 \overline{) 20060584} \left( 21900 \right.$

$$\begin{array}{r} 20060584 \\ -1832 \downarrow \downarrow \downarrow \downarrow \\ \hline 1740 \\ -916 \downarrow \\ \hline 8245 \\ -8244 \downarrow \downarrow \downarrow \\ \hline 184 \end{array}$$

(f)  $327 \overline{) 328479} \left( 1004 \right.$

$$\begin{array}{r} 328479 \\ -327 \downarrow \downarrow \downarrow \downarrow \\ \hline 1479 \\ -1308 \\ \hline 171 \end{array}$$

(g)  $28 \overline{) 6238} \left( 222 \right.$

$$\begin{array}{r} 6238 \\ -56 \downarrow \\ \hline 63 \\ -56 \downarrow \\ \hline 78 \\ -56 \\ \hline 22 \end{array}$$

(h)  $165 \overline{) 9580} \left( 58 \right.$

$$\begin{array}{r} 9580 \\ -825 \downarrow \\ \hline 1330 \\ -1320 \\ \hline 10 \end{array}$$

$$\begin{array}{r}
 (i) \quad 96 \overline{) 310752} \quad (3237 \\
 \underline{-288} \quad \downarrow \downarrow \downarrow \\
 227 \quad \downarrow \downarrow \\
 \underline{-192} \quad \downarrow \\
 355 \quad \downarrow \\
 \underline{-288} \\
 672 \\
 \underline{-672} \\
 0
 \end{array}$$

$$\begin{array}{r}
 (j) \quad 325 \overline{) 28280} \quad (87 \\
 \underline{-2600} \quad \downarrow \\
 2280 \\
 \underline{-2275} \\
 5
 \end{array}$$

$$\begin{array}{r}
 (k) \quad 2815 \overline{) 684045} \quad (243 \\
 \underline{-5630} \quad \downarrow \downarrow \\
 12104 \quad \downarrow \\
 \underline{-11260} \quad \downarrow \\
 8445 \\
 \underline{-8445} \\
 0
 \end{array}$$

$$\begin{array}{r}
 (l) \quad 117 \overline{) 2760} \quad (23 \\
 \underline{-234} \quad \downarrow \\
 420 \\
 \underline{-351} \\
 69
 \end{array}$$

$$\begin{array}{r}
 (m) \quad 545 \overline{) 562580} \quad (1032 \\
 \underline{-545} \quad \downarrow \downarrow \downarrow \\
 1758 \quad \downarrow \downarrow \\
 \underline{-1635} \quad \downarrow \\
 1230 \\
 \underline{-1090} \\
 140
 \end{array}$$

$$\begin{array}{r}
 (n) \quad 775 \overline{) 4005730} \quad (5168 \\
 \underline{-3875} \quad \downarrow \downarrow \downarrow \\
 1307 \quad \downarrow \downarrow \\
 \underline{-775} \quad \downarrow \\
 5323 \\
 \underline{-4650} \\
 6730 \\
 \underline{-6200} \\
 530
 \end{array}$$

$$\begin{array}{r}
 (o) \quad 639 \overline{) 7038421} \quad (11014 \\
 \underline{-639} \quad \downarrow \downarrow \downarrow \\
 648 \quad \downarrow \downarrow \downarrow \\
 \underline{-639} \quad \downarrow \downarrow \\
 942 \quad \downarrow \\
 \underline{-639} \\
 3031 \\
 \underline{-2556} \\
 475
 \end{array}$$

$$\begin{array}{r}
 144 \overline{) 1270224} \quad (8821 \\
 \underline{-1152} \quad \downarrow \downarrow \downarrow \\
 1182 \quad \downarrow \downarrow \\
 \underline{-1152} \quad \downarrow \\
 302 \\
 \underline{-288} \\
 144 \\
 \underline{-144} \\
 0
 \end{array}$$

2. Total number of litch = 12,70,224

Litch placed in one box = 144

Total number of boxes required =  $1270224 \div 144 = 8821$  boxes are required.

3. Let the greatest 5 digits :

Number = 99999

Divison = 25

The greatest 5 gogot mi,ner =  $99999 \div 25$

$$Q = 3999, R = 24$$

So, the number =  $99999 - 24 = 99975$

$$\begin{array}{r}
 25 \overline{) 99999} \quad (3999 \\
 \underline{-75} \quad \downarrow \downarrow \downarrow \\
 249 \quad \downarrow \downarrow \\
 \underline{-225} \quad \downarrow \\
 249 \\
 \underline{-225} \\
 249 \\
 \underline{-225} \\
 24
 \end{array}$$

4. A jeweller makes 3 stand pearl necklace, pearls in each strand = 75  $\textcircled{1}$   
 Pearls used in 1 necklace =  $75 \times 3 = 225$
- $$\begin{array}{r} 12500 \\ \times 225 \\ \hline 62500 \\ 25000 \times \\ 25000 \times \times \\ \hline 2812500 \end{array}$$
- Total necklace to be made = 12500  
 Total pearls required =  $12500 \times 225$
- Each packet contains = 100 pearls  
 No. of packets required =  $2812500 \div 100 = 28125$  packets are required.

### Exercise 3.6

Tick (✓) the correct answer :

1. Add (b)  $\textcircled{1} \textcircled{1} \textcircled{1} \textcircled{1} \textcircled{1} \textcircled{1}$

$$\begin{array}{r} 2486259 \\ + 7654982 \\ \hline 10141241 \end{array}$$

2. Subtract (a)  $\textcircled{8} \textcircled{11} \textcircled{15} \textcircled{3} \textcircled{16} \textcircled{7} \textcircled{11} \textcircled{11}$

$$\begin{array}{r} 925463821 \\ - 56392786 \\ \hline 869071035 \end{array}$$

3. Multiply (d)

$$\begin{array}{r} 52896 \\ \times 520 \\ \hline 00000 \\ 105792 \times \\ 264480 \times \times \\ \hline 27505920 \end{array}$$

4. Divide (d)  $769 \overline{)183800} (239$

$$\begin{array}{r} 183800 \\ - 1538 \downarrow \\ \hline 3008 \\ - 2307 \downarrow \\ \hline 7010 \\ - 6921 \\ \hline 089 \end{array}$$

5. (d) Membership fee for a particular club per year = 4,550

$$\begin{array}{r} 7250 \\ \times 4550 \\ \hline 0000 \\ 36250 \times \\ 36250 \times \times \\ 29000 \times \times \times \\ \hline 32987500 \end{array}$$

No. of people who are the members of the club = 7250

## Chapter-4 (Prime Factorization)

### Exercise 4.1

- Fill in the blanks :
  - Small multiple of 8 is 16.
  - A number is divisible by another if on dividing the remainder is 0.
  - If we add 1 to an even number, it becomes an odd number.
  - 1 is neither composite nor prime.
  - A number divisible by 5 if it is 5 or 0.
  - 1 is a factor of every number.
- Write the next three multiples :
  - 3, 6, 9, 12, 15, 18, 21

(b) 8, 16, 24, 32, 40, 48, 56

(c) 18, 36, 54, 72, 90, 108, 126

3. Write all the even numbers between 30 to 50 :

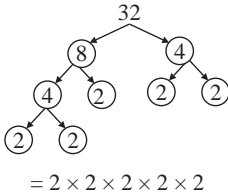
32, 34, 36, 38, 40, 42, 44, 46, 48

4. Tick (✓) the even numbers:

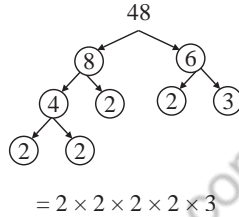
3, 12, 15, 19, 24, 80, 37, 48  
✓            ✓   ✓            ✓

5. Find the prime factors by factor tree method:

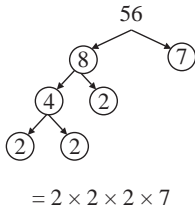
(a)



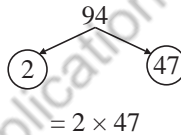
(b)



(c)



(d)



6. Find the prime factors by division method :

$$\begin{array}{r|l} 2 & 20 \\ \hline 2 & 10 \\ \hline 5 & 5 \\ \hline & 1 \end{array}$$

$$= 2 \times 2 \times 5$$

$$\begin{array}{r|l} 6 & 42 \\ \hline 7 & 7 \\ \hline & 1 \end{array}$$

$$= 6 \times 7$$

$$\begin{array}{r|l} 3 & 69 \\ \hline 23 & 23 \\ \hline & 1 \end{array}$$

$$= 3 \times 23$$

$$\begin{array}{r|l} 2 & 138 \\ \hline 3 & 69 \\ \hline 23 & 23 \\ \hline & 1 \end{array}$$

$$= 2 \times 3 \times 23$$

7. Write two factors of each :

(a)  $8 = 2 \times 4$

(b)  $10 = 2 \times 5$

(c)  $12 = 4 \times 3$

(d)  $14 = 2 \times 7$

8. 17 is a prime number

### Exercise 4.2

1. Write whether the given number is prime or composite :

(a) 5 is a Prime number

(b) 910 is a Composite number

(c) 53 is a Prime number

(d) 2 is a Prime number

(e) 19 is a Prime number

(f) 21 is a Composite number

(g) 17 is a Prime number

(h) 88 is a Composite number

(i) 41 is a Prime number

2. Fill in the blanks :

(a) The smallest prime number is 2.

- (b) 0 and 1 are not prime numbers.  
 (c) The smallest composite number is 4.  
 (d) A composite number has two or more factors.  
 (e) There are 25 prime numbers between 1 to 100.  
 (f) 1 is neither prime nor composite.  
 (g) Two consecutive numbers which are prime numbers are 2 and 3.
3. Write the common factors of each pair of numbers :
- (a)  $\textcircled{12}$   $\textcircled{18}$  2 and 3 are the common factors.  
 (b)  $\textcircled{42}$   $\textcircled{308}$  2 and 7 are common factors.  
 (c)  $\textcircled{42}$   $\textcircled{75}$  3 is a common factor.
4. Write all the prime numbers between :
- (a) 20 and 30 = 23, 29 are the prime numbers.  
 (b) 40 and 60 = 41, 43, 47, 53, 59 are the prime numbers.  
 (c) 70 and 90 = 71, 73, 79, 83, 89 are the prime numbers.
5. Write the factors of each number :

$$\begin{array}{r|l} 2 & 8 \\ \hline 2 & 4 \\ \hline 2 & 2 \\ \hline & 1 \end{array}$$

$$= 2 \times 2 \times 2$$

$$\begin{array}{r|l} 2 & 12 \\ \hline 2 & 6 \\ \hline 3 & 3 \\ \hline & 1 \end{array}$$

$$= 2 \times 2 \times 3$$

$$\begin{array}{r|l} 2 & 30 \\ \hline 3 & 15 \\ \hline 5 & 5 \\ \hline & 1 \end{array}$$

$$= 2 \times 3 \times 5$$

$$\begin{array}{r|l} 2 & 74 \\ \hline 37 & 37 \\ \hline & 1 \end{array}$$

$$= 2 \times 37$$

### Exercise 4.3

1. Find the prime factors of following numbers :

$$\begin{array}{r|l} 2 & 5184 \\ \hline 2 & 2592 \\ \hline 2 & 1296 \\ \hline 2 & 648 \\ \hline 2 & 324 \\ \hline 2 & 162 \\ \hline 3 & 81 \\ \hline 3 & 27 \\ \hline 3 & 9 \\ \hline 3 & 3 \\ \hline & 1 \end{array}$$

$$5184 = 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 3 \times 3 \times 3 \times 3$$

$$\begin{array}{r|l} 2 & 8142 \\ \hline 3 & 4071 \\ \hline 23 & 1357 \\ \hline 59 & 59 \\ \hline & 1 \end{array}$$

$$8142 = 2 \times 3 \times 23 \times 59$$

$$\begin{array}{r|l} 5 & 1225 \\ \hline 5 & 245 \\ \hline 7 & 49 \\ \hline 7 & 7 \\ \hline & 1 \end{array}$$

$$1225 = 5 \times 5 \times 7 \times 7$$

$$\begin{array}{r|l} 3 & 28917 \\ \hline 3 & 9639 \\ \hline 3 & 3213 \\ \hline 3 & 1071 \\ \hline 3 & 357 \\ \hline 7 & 119 \\ \hline 17 & 17 \\ \hline & 1 \end{array}$$

$$28917 = 3 \times 3 \times 3 \times 3 \times 3 \times 7 \times 17$$

2. Without actual division, test the divisibility of the following numbers:

- (a) 160 by 2

As the number's ones digit is 0, the number is divisible by 2

- (b) 6871 by 3

The sum of digits is  $6 + 8 + 7 + 1 = 22$

The sum is not divisible by 3. Hence, number is not divisible by 3.

- (c) 150 by 4  
As the number formed by last two digits is 50 which is not divisible by 4  
Hence, the number is not divisible by four.
- (d) 29396 by 9  
As the sum of digit  $2 + 9 + 3 + 9 + 6 = 29$  is not divisible by 9, the number 29396 is not divisible by 9.
- (e) 58680 by 5  
As the last number is 0 the number 58680 is divisible by 5.
- (f) 1792 by 7  
Double the last digit is 4, Rest number is 179,  $179 - 4 = 175$   
Double the last digit = 10, Rest number = 17,  $17 - 10 = 7$   
7 is divisible by 7.  
Hence, the number 1792 is divisible by 7
- (g) 387 by 9  
The sum of digit is  $3 + 8 + 7 = 18$ , 18 is divisible by 9  
Hence, the number 387 is divisible by 9
- (h) 20994 by 4  
As the last two digit is 94 which in not divisible by 4  
so, the number is not divisible by 4.
- (i) 26279 by 10  
The sum of digits at odd places are  $2 + 2 + 9 = 13$   
The sum of digits at even places are  $6 + 7 = 13$   
The difference is  $13 - 13 = 0$ .  
As 0 is divisible by 11, the number 262796 is divisible by 11
- (j) 2970 by 11  
The sum of digits at odd places =  $2 + 7 = 9$   
The sum of digits at even places =  $9 + 0 = 9$   
The difference is  $9 - 9 = 0$   
As 0 is divisible by 11, the number 2970 is divisible by 10.
- (k) 7552 by 5  
As the last digit of number is 2 which is not divisible by 5, hence, the number is not divisible by 5
- (l) 48895 by 7  
Double of the last digit is 10. The rest of the number is 4889.  
Their difference is  $4889 - 10 = 4879$ .  
Is 4879 divisible by 7?  
Double the last digit is 18. The rest of the number is 487. Their difference is  $487 - 18 = 469$ , which is divisible by 7. So 489 is divisible by 7, which makes 48895 divisible by 7.
- (m) 43490 by 12  
43490 is not divisible by 3 as the sum of digits are not divisible by 3.  
43490 is not divisible by 4 as the sum of digits are not divisible by 4.  
Hence, 43490 is not divisible by 12

(n) 3290 by 15

The number is divisible by 5 as the last digit of number is zero.

The number is not divisible by 3 as the sum of digits  $3 + 2 + 9 + 0 = 14$  which is not divisible by 3.

The number is not divisible by 15 because it is not divisible by 3, but only by 5

(o) 59112 by 6

The number is divisible by 2 as the last digit of number is divisible by 2.

The number is divisible by 3 as sum of digits  $5 + 9 + 1 + 1 + 2 = 18$  is divisible by 3.

The number is divisible by 6.

3. Find the prime factorization of the following numbers using division method:

$$\begin{array}{r} 2 \overline{) 10} \\ \underline{5} \phantom{0} \\ 5 \phantom{0} \\ \underline{5} \\ 0 \end{array}$$

$$10 = 2 \times 5$$

$$\begin{array}{r} 2 \overline{) 16} \\ \underline{2} \phantom{0} \\ 2 \phantom{0} \\ \underline{2} \phantom{0} \\ 2 \phantom{0} \\ \underline{2} \\ 0 \end{array}$$

$$16 = 2 \times 2 \\ \times 2 \times 2$$

$$\begin{array}{r} 2 \overline{) 24} \\ \underline{2} \phantom{0} \\ 2 \phantom{0} \\ \underline{2} \phantom{0} \\ 3 \phantom{0} \\ \underline{3} \\ 0 \end{array}$$

$$24 = 2 \times 2 \\ \times 2 \times 3$$

$$\begin{array}{r} 2 \overline{) 32} \\ \underline{2} \phantom{0} \\ 2 \phantom{0} \\ \underline{2} \phantom{0} \\ 2 \phantom{0} \\ \underline{2} \\ 0 \end{array}$$

$$32 = 2 \times 2 \\ \times 2 \times 2 \times 2$$

$$\begin{array}{r} 2 \overline{) 36} \\ \underline{2} \phantom{0} \\ 3 \phantom{0} \\ \underline{3} \phantom{0} \\ 3 \phantom{0} \\ \underline{3} \\ 0 \end{array}$$

$$36 = 2 \times 2 \\ \times 3 \times 3$$

$$\begin{array}{r} 2 \overline{) 42} \\ \underline{3} \phantom{0} \\ 7 \phantom{0} \\ \underline{7} \\ 0 \end{array}$$

$$42 = 2 \times 3 \\ \times 7$$

$$\begin{array}{r} 2 \overline{) 48} \\ \underline{2} \phantom{0} \\ 2 \phantom{0} \\ \underline{2} \phantom{0} \\ 2 \phantom{0} \\ \underline{2} \phantom{0} \\ 3 \phantom{0} \\ \underline{3} \\ 0 \end{array}$$

$$48 = 2 \times 2 \\ \times 2 \times 2 \times 3$$

$$\begin{array}{r} 2 \overline{) 50} \\ \underline{5} \phantom{0} \\ 5 \phantom{0} \\ \underline{5} \\ 0 \end{array}$$

$$50 = 2 \times 5 \\ \times 5$$

$$\begin{array}{r} 2 \overline{) 54} \\ \underline{3} \phantom{0} \\ 3 \phantom{0} \\ \underline{3} \phantom{0} \\ 3 \phantom{0} \\ \underline{3} \\ 0 \end{array}$$

$$54 = 2 \times 3 \\ \times 3 \times 3$$

$$\begin{array}{r} 2 \overline{) 58} \\ \underline{29} \phantom{0} \\ 1 \phantom{0} \\ \underline{1} \\ 0 \end{array}$$

$$58 = 2 \times 29$$

$$\begin{array}{r} 2 \overline{) 78} \\ \underline{3} \phantom{0} \\ 13 \phantom{0} \\ \underline{13} \\ 0 \end{array}$$

$$78 = 2 \times 3 \\ \times 13$$

$$\begin{array}{r} 2 \overline{) 86} \\ \underline{43} \phantom{0} \\ 1 \phantom{0} \\ \underline{1} \\ 0 \end{array}$$

$$86 = 2 \times 43$$

$$\begin{array}{r} 2 \overline{) 88} \\ \underline{2} \phantom{0} \\ 2 \phantom{0} \\ \underline{2} \phantom{0} \\ 11 \phantom{0} \\ \underline{11} \\ 0 \end{array}$$

$$88 = 2 \times 2 \\ \times 2 \times 11$$

$$\begin{array}{r} 2 \overline{) 94} \\ \underline{47} \phantom{0} \\ 1 \phantom{0} \\ \underline{1} \\ 0 \end{array}$$

$$94 = 2 \times 47$$

$$\begin{array}{r} 2 \overline{) 96} \\ \underline{2} \phantom{0} \\ 2 \phantom{0} \\ \underline{2} \phantom{0} \\ 2 \phantom{0} \\ \underline{2} \phantom{0} \\ 3 \phantom{0} \\ \underline{3} \\ 0 \end{array}$$

$$96 = 2 \times 2 \\ \times 2 \times 2 \times 2 \times 3$$

$$\begin{array}{r} 2 \overline{) 112} \\ \underline{2} \phantom{0} \\ 2 \phantom{0} \\ \underline{2} \phantom{0} \\ 2 \phantom{0} \\ \underline{2} \phantom{0} \\ 7 \phantom{0} \\ \underline{7} \\ 0 \end{array}$$

$$96 = 2 \times 2 \\ \times 2 \times 2 \times 7$$

$$(q) \begin{array}{r|l} 2 & 158 \\ \hline 79 & 79 \\ \hline & 1 \end{array}$$

$$158 = 2 \times 79$$

$$(r) \begin{array}{r|l} 2 & 250 \\ \hline 5 & 125 \\ \hline 5 & 25 \\ \hline 5 & 5 \\ \hline & 1 \end{array}$$

$$88 = 2 \times 5 \times 5 \times 5$$

$$(s) \begin{array}{r|l} 2 & 282 \\ \hline 3 & 141 \\ \hline 47 & 47 \\ \hline & 1 \end{array}$$

$$282 = 2 \times 3 \times 47$$

$$(t) \begin{array}{r|l} 2 & 296 \\ \hline 2 & 148 \\ \hline 2 & 74 \\ \hline 37 & 37 \\ \hline & 1 \end{array}$$

$$296 = 2 \times 2 \times 2 \times 37$$

### Exercise 4.4

Tick (✓) the correct answer:

1. (c)    2. (a)    3. (d)    4. (c)    5. (a)

## Chapter-5 (Highest Common Factor and Lowest Common Multiple)

### Exercise 5.1

1. Find the H.C.F. of the following by prime factorization :

- (a) 12 and 28

$$\begin{array}{r|l} 2 & 12 \\ \hline 2 & 6 \\ \hline 3 & 3 \\ \hline & 1 \end{array} \quad \begin{array}{r|l} 2 & 28 \\ \hline 2 & 14 \\ \hline 7 & 7 \\ \hline & 1 \end{array}$$

$$12 = 2 \times 2 \times 3$$

$$28 = 2 \times 2 \times 7$$

$$\text{H.C.F.} = 2 \times 2 = 4$$

- (b) 25, 40 and 116

$$\begin{array}{r|l} 5 & 25 \\ \hline 5 & 5 \\ \hline & 1 \end{array} \quad \begin{array}{r|l} 2 & 40 \\ \hline 2 & 20 \\ \hline 2 & 10 \\ \hline 5 & 5 \\ \hline & 1 \end{array} \quad \begin{array}{r|l} 2 & 116 \\ \hline 2 & 58 \\ \hline 29 & 29 \end{array}$$

$$25 = 5 \times 5$$

$$40 = 2 \times 2 \times 2 \times 5$$

$$116 = 2 \times 2 \times 29$$

$$\text{H.C.F.} = 1$$

- (c) 63, 105, 147

$$\begin{array}{r|l} 3 & 63 \\ \hline 3 & 21 \\ \hline 7 & 7 \\ \hline & 1 \end{array} \quad \begin{array}{r|l} 5 & 105 \\ \hline 3 & 21 \\ \hline 7 & 7 \\ \hline & 1 \end{array} \quad \begin{array}{r|l} 3 & 147 \\ \hline 7 & 49 \\ \hline 7 & 7 \\ \hline & 1 \end{array}$$

$$63 = 3 \times 3 \times 7$$

$$105 = 5 \times 3 \times 7$$

$$147 = 3 \times 7 \times 7$$

$$\text{H.C.F.} = 3 \times 7 = 21$$

2. Find the L.C.M of the following by prime factorization :

(a)  $\begin{array}{r|l} 2 & 16, 20 \\ \hline 2 & 8, 10 \\ \hline 4 & 4, 5 \\ \hline 5 & 1, 5 \\ \hline & 1, 1 \end{array}$

$$2 \times 2 \times 4 \times 5 = 80$$

(b)  $\begin{array}{r|l} 5 & 10, 25, 50 \\ \hline 5 & 2, 5, 10 \\ \hline 2 & 2, 1, 2 \\ \hline & 1, 1, 1 \end{array}$

$$5 \times 5 \times 2 = 50$$

(c)  $\begin{array}{r|l} 2 & 21, 42, 84 \\ \hline 3 & 21, 21, 42 \\ \hline 7 & 7, 7, 14 \\ \hline 2 & 1, 1, 2 \\ \hline & 1, 1, 1 \\ \hline & 1, 1, 1 \end{array}$

$$2 \times 3 \times 7 \times 2 = 84$$

3. Find H.C.F. of following using factors method :

$$(a) \begin{array}{r|l} 5 & 10, 20 \\ \hline 2 & 2, 4 \\ \hline & 1, 2 \end{array}$$

$$2 \times 5 = 10$$

$$(b) \begin{array}{r|l} 2 & 12, 20, 36 \\ \hline 2 & 6, 10, 18 \\ \hline & 3, 5, 9 \end{array}$$

$$2 \times 2 = 4$$

$$(c) \begin{array}{r|l} 5 & 25, 40, 80 \\ \hline & 5, 8, 16 \\ \hline & = 5 \end{array}$$

4. Find the L.C.M. of following numbers :

$$(a) \begin{array}{r|l} 2 & 8, 10 \\ \hline 4 & 4, 5 \\ \hline 5 & 1, 5 \\ \hline & 1, 1 \end{array}$$

$$2 \times 4 \times 5 = 40$$

$$(b) \begin{array}{r|l} 2 & 12, 16 \\ \hline 2 & 6, 8 \\ \hline 3 & 3, 4 \\ \hline 4 & 1, 4 \\ \hline & 1, 1 \end{array}$$

$$2 \times 2 \times 3 \times 4 = 48$$

$$(c) \begin{array}{r|l} 2 & 18, 24 \\ \hline 3 & 9, 12 \\ \hline 3 & 3, 4 \\ \hline 4 & 1, 4 \\ \hline & 1, 1 \end{array}$$

$$2 \times 3 \times 3 \times 4 = 72$$

### Exercise 5.2

1. Find the H.C.F. of the following numbers by separate prime factorization :

$$(a) \begin{array}{r|l} 2 & 12 \\ \hline 2 & 6 \\ \hline 3 & 3 \\ \hline & 1 \end{array} \quad \begin{array}{r|l} 2 & 20 \\ \hline 2 & 10 \\ \hline 5 & 5 \\ \hline & 1 \end{array}$$

$$12 = 2 \times 2 \times 3$$

$$12 = 2 \times 2 \times 3$$

$$\text{HCF} = 2 \times 2 = 4$$

$$(b) \begin{array}{r|l} 3 & 18 \\ \hline 3 & 6 \\ \hline 2 & 2 \\ \hline & 1 \end{array} \quad \begin{array}{r|l} 3 & 27 \\ \hline 3 & 9 \\ \hline 3 & 3 \\ \hline & 1 \end{array}$$

$$18 = 3 \times 3 \times 2$$

$$27 = 3 \times 3 \times 3$$

$$\text{HCF} = 3 \times 3 = 9$$

$$(c) \begin{array}{r|l} 5 & 25 \\ \hline 5 & 5 \\ \hline & 1 \end{array} \quad \begin{array}{r|l} 5 & 50 \\ \hline 5 & 10 \\ \hline 2 & 2 \\ \hline & 1 \end{array}$$

$$25 = 5 \times 5$$

$$50 = 5 \times 5 \times 2$$

$$\text{HCF} = 5 \times 5 = 25$$

$$(d) \begin{array}{r|l} 5 & 35 \\ \hline 7 & 7 \\ \hline & 1 \end{array} \quad \begin{array}{r|l} 5 & 50 \\ \hline 5 & 10 \\ \hline 2 & 2 \\ \hline & 1 \end{array}$$

$$35 = 7 \times 5$$

$$50 = 5 \times 5 \times 2$$

$$\text{HCF} = 5$$

$$(e) \begin{array}{r|l} 2 & 48 \\ \hline 2 & 24 \\ \hline 2 & 12 \\ \hline 2 & 6 \\ \hline 3 & 3 \\ \hline & 1 \end{array} \quad \begin{array}{r|l} 2 & 52 \\ \hline 2 & 26 \\ \hline 13 & 13 \\ \hline & 1 \end{array}$$

$$48 = 2 \times 2 \times 2 \times 2 \times 3$$

$$52 = 2 \times 2 \times 13$$

$$\text{HCF} = 2 \times 2 = 4$$

$$(f) \begin{array}{r|l} 2 & 54 \\ \hline 3 & 27 \\ \hline 3 & 9 \\ \hline 3 & 3 \\ \hline & 1 \end{array} \quad \begin{array}{r|l} 2 & 62 \\ \hline 31 & 31 \\ \hline & 1 \end{array}$$

$$54 = 2 \times 3 \times 3 \times 3$$

$$62 = 2 \times 31$$

$$\text{HCF} = 2$$

$$\begin{array}{r}
 \text{(g)} \quad \begin{array}{r} 2 \mid 46 \\ 23 \mid 23 \\ \hline 1 \end{array} \quad \begin{array}{r} 3 \mid 87 \\ 29 \mid 29 \\ \hline 1 \end{array} \\
 \text{HCF} = 1
 \end{array}
 \quad
 \begin{array}{r}
 \text{(h)} \quad \begin{array}{r} 3 \mid 99 \\ 3 \mid 33 \\ 11 \mid 11 \\ \hline 1 \end{array} \quad \begin{array}{r} 11 \mid 143 \\ 13 \mid 13 \\ \hline 1 \end{array} \quad \begin{array}{l} 99 = 3 \times 3 \times \boxed{11} \\ 143 = \boxed{11} \times 13 \\ \text{HCF} = 11 \end{array}
 \end{array}$$

2. Find the H.C.F. of the following numbers by common prime factorization :

$$\begin{array}{r}
 \text{(a)} \quad \begin{array}{r} 2 \mid 12, 18 \\ 3 \mid 6, 9 \\ \hline 2, 3 \end{array} \quad \text{(b)} \quad \begin{array}{r} 3 \mid 36, 60 \\ 2 \mid 12, 20 \\ 2 \mid 6, 10 \\ \hline 3, 5 \end{array} \quad \text{(c)} \quad \begin{array}{r} 2 \mid 18, 24, 42 \\ 3 \mid 9, 12, 21 \\ \hline 3, 4, 7 \end{array}
 \end{array}$$

$$\text{HCF} = 2 \times 3 = 6$$

$$\text{HCF} = 3 \times 2 \times 2 = 12$$

$$\text{HCF} = 2 \times 3 = 6$$

$$\begin{array}{r}
 \text{(d)} \quad \begin{array}{r} 2 \mid 28, 42, 56 \\ 7 \mid 14, 21, 28 \\ \hline 2, 3, 4 \end{array} \quad \text{(e)} \quad \begin{array}{r} 2 \mid 18, 32, 48 \\ \hline 9, 16, 24 \end{array} \quad \text{(f)} \quad \begin{array}{r} 2 \mid 4, 32, 56 \\ 2 \mid 2, 16, 28 \\ 2 \mid 1, 8, 14 \\ \hline 1, 4, 7 \end{array}
 \end{array}$$

$$\text{HCF} = 2 \times 7 = 14$$

$$\text{HCF} = 2$$

$$\text{HCF} = 2 \times 2 \times 2 = 8$$

$$\begin{array}{r}
 \text{(g)} \quad \begin{array}{r} 2 \mid 6, 28, 44 \\ 2 \mid 3, 14, 22 \\ \hline 3, 7, 11 \end{array} \quad \text{(h)} \quad \begin{array}{r} 5 \mid 25, 40, 80 \\ \hline 5, 8, 16 \end{array} \\
 \text{HCF} = 2 \times 2 = 4 \quad \text{HCF} = 5
 \end{array}$$

3. We know that,

$$\text{Divisor} \times \text{Quotient} = \text{Dividend} - \text{Remainder}$$

Now, subtract the remainder from dividends.

$$38 - 2 = 36; \quad 51 - 3 = 48; \quad 124 - 4 = 120$$

$$\begin{array}{r}
 \begin{array}{r} 2 \mid 36 \\ 2 \mid 18 \\ 3 \mid 9 \\ 3 \mid 3 \\ \hline 1 \end{array} \quad \begin{array}{r} 2 \mid 48 \\ 2 \mid 24 \\ 2 \mid 12 \\ 2 \mid 6 \\ 3 \mid 3 \\ \hline 1 \end{array} \quad \begin{array}{r} 2 \mid 120 \\ 2 \mid 60 \\ 2 \mid 30 \\ 5 \mid 15 \\ 3 \mid 3 \\ \hline 1 \end{array}
 \end{array}$$

$$\begin{array}{l}
 36 = \boxed{2} \times \boxed{2} \times 3 \times \boxed{3} \\
 48 = \boxed{2} \times \boxed{2} \times 2 \times 2 \times \boxed{3} \\
 120 = \boxed{2} \times \boxed{2} \times 2 \times 5 \times \boxed{3} \\
 \text{H.C.F.} = 2 \times 2 \times 3 = 12
 \end{array}$$

4. We know that,

$$\text{Divisor} \times \text{Quotient} = \text{Dividend} - \text{Remainder}$$

Now, subtract the remainder from dividends.

$$665 - 5 = 660; \quad 798 - 6 = 792; \quad 931 - 7 = 924$$

$$\begin{array}{r}
 \begin{array}{r} 2 \mid 660 \\ 3 \mid 330 \\ 11 \mid 110 \\ \hline 10 \end{array} \quad \begin{array}{r} 2 \mid 792 \\ 2 \mid 396 \\ 2 \mid 198 \\ 11 \mid 99 \\ 3 \mid 9 \\ 3 \mid 3 \\ \hline 1 \end{array} \quad \begin{array}{r} 2 \mid 924 \\ 2 \mid 462 \\ 11 \mid 231 \\ 3 \mid 21 \\ 7 \mid 7 \\ \hline 1 \end{array}
 \end{array}$$

$$\begin{array}{l}
 660 = \boxed{2} \times \boxed{3} \times \boxed{11} \\
 792 = \boxed{2} \times 2 \times 2 \times \boxed{11} \times \boxed{3} \times 3 \\
 924 = \boxed{2} \times 2 \times \boxed{11} \times \boxed{3} \times 7 \\
 \text{H.C.F.} = 2 \times 3 \times 11 = 66 \\
 \therefore 66 \text{ is the greatest number.}
 \end{array}$$

5. We know that,

$$\text{Divisor} \times \text{Quotient} = \text{Dividend} - \text{Remainder}$$

$$\begin{array}{r|l} 2 & 884 \\ \hline 2 & 442 \\ \hline & 221 \end{array}$$

$$\begin{array}{r|l} 2 & 1156 \\ \hline 2 & 578 \\ \hline 17 & 289 \\ \hline & 17 \end{array}$$

$$\begin{array}{r|l} 2 & 918 \\ \hline 3 & 459 \\ \hline 3 & 153 \\ \hline & 51 \end{array}$$

$$\begin{aligned} 884 &= 2 \times 2 \times 221 \\ 1156 &= 2 \times 2 \times 17 \times 17 \\ 918 &= 2 \times 3 \times 3 \times 51 \\ \text{H.C.F.} &= 2 \end{aligned}$$

### Exercise 5.3

1. Find the H.C.F. of the following numbers by long division method :

(a) 
$$\begin{array}{r} 217 \overline{)686} \langle 3 \\ -651 \\ \hline 35 \\ 35 \overline{)217} \langle 6 \\ -210 \\ \hline 7 \\ 7 \overline{)35} \langle 5 \\ -35 \\ \hline \times \end{array}$$

HCF of 217 and 686 is 7.

(b) 
$$\begin{array}{r} 320 \overline{)736} \langle 2 \\ -640 \\ \hline 96 \\ 96 \overline{)320} \langle 3 \\ -288 \\ \hline 32 \\ 32 \overline{)96} \langle 3 \\ -96 \\ \hline \times \end{array}$$

HCF of 320 and 736 is 32.

(c) 
$$\begin{array}{r} 192 \overline{)216} \langle 1 \\ -192 \\ \hline 24 \\ 24 \overline{)192} \langle 8 \\ -192 \\ \hline \times \\ 24 \overline{)336} \langle 14 \\ -336 \\ \hline \times \end{array}$$

HCF of 192, 336 and 216 is 24.

(d) 
$$\begin{array}{r} 144 \overline{)252} \langle 1 \\ -144 \\ \hline 108 \\ 108 \overline{)144} \langle 1 \\ -108 \\ \hline 36 \\ 36 \overline{)108} \langle 3 \\ -108 \\ \hline \times \end{array}$$

HCF of 144, 252 and 686 is 36.

(e) 
$$\begin{array}{r} 315 \overline{)567} \langle 1 \\ -315 \\ \hline 252 \\ 252 \overline{)315} \langle 1 \\ -252 \\ \hline 63 \\ 63 \overline{)252} \langle 4 \\ -252 \\ \hline \times \end{array}$$

HCF of 315, 567 is 63.

(f) 
$$\begin{array}{r} 391 \overline{)425} \langle 1 \\ -391 \\ \hline 34 \\ 34 \overline{)391} \langle 11 \\ -374 \\ \hline 17 \\ 17 \overline{)34} \langle 2 \\ -34 \\ \hline \times \end{array}$$

$$\begin{array}{r} 17 \overline{)527} \langle 31 \\ -527 \\ \hline \times \end{array}$$

HCF of 391, 425 and 527 is 17.

(g) 
$$\begin{array}{r} 924 \overline{) 1011} (1 \\ \underline{-924} \\ 87 \\ 87 \overline{) 924} (10 \\ \underline{-870} \\ 54 \\ 54 \overline{) 87} (1 \\ \underline{-54} \\ 33 \\ 33 \overline{) 54} (1 \\ \underline{-33} \\ 21 \\ 21 \overline{) 33} (1 \\ \underline{-21} \\ 12 \\ 12 \overline{) 21} (1 \\ \underline{-12} \\ 9 \\ 9 \overline{) 12} (1 \\ \underline{-9} \\ 3 \\ 3 \overline{) 9} (3 \\ \underline{-9} \\ \times \end{array}$$

(h) 
$$\begin{array}{r} 525 \overline{) 830} (1 \\ \underline{-525} \\ 305 \\ 305 \overline{) 525} (1 \\ \underline{-305} \\ 220 \\ 220 \overline{) 305} (1 \\ \underline{-220} \\ 85 \\ 85 \overline{) 220} (2 \\ \underline{-170} \\ 50 \\ 50 \overline{) 85} (1 \\ \underline{-50} \\ 35 \\ 35 \overline{) 50} (1 \\ \underline{-35} \\ 15 \\ 15 \overline{) 35} (2 \\ \underline{-30} \\ 5 \\ 5 \overline{) 15} (3 \\ \underline{-15} \\ \times \end{array}$$

(i) 
$$\begin{array}{r} 216 \overline{) 372} (1 \\ \underline{-216} \\ 156 \\ 156 \overline{) 216} (1 \\ \underline{-156} \\ 60 \\ 60 \overline{) 156} (2 \\ \underline{-120} \\ 36 \\ 36 \overline{) 60} (1 \\ \underline{-36} \\ 24 \end{array} \quad \begin{array}{r} 24 \overline{) 36} (1 \\ \underline{-24} \\ 12 \\ 12 \overline{) 24} (2 \\ \underline{-24} \\ \times \end{array} \quad \begin{array}{r} 12 \overline{) 420} (35 \\ \underline{-420} \\ \times \end{array}$$

HCF of 216, 372 and 420 is 12.

$$\begin{array}{r}
 \text{(j) } 203 \overline{)319} \begin{array}{l} 1 \\ -203 \\ \hline 116 \end{array} \begin{array}{l} 203 \begin{array}{l} 1 \\ -116 \\ \hline 87 \end{array} \begin{array}{l} 116 \begin{array}{l} 1 \\ -87 \\ \hline 29 \end{array} \end{array} \\
 \hline
 29 \overline{)377} \begin{array}{l} 13 \\ -377 \\ \hline \times \end{array}
 \end{array}$$

HCF of 203, 319 and 377 is 29.

$$\begin{array}{r}
 \text{(k) } 450 \overline{)675} \begin{array}{l} 1 \\ -450 \\ \hline 225 \end{array} \begin{array}{l} 450 \begin{array}{l} 2 \\ -450 \\ \hline \times \end{array} \\
 \hline
 225 \overline{)825} \begin{array}{l} 3 \\ -675 \\ \hline 150 \end{array} \begin{array}{l} 225 \begin{array}{l} 1 \\ -150 \\ \hline 75 \end{array} \begin{array}{l} 150 \begin{array}{l} 2 \\ -150 \\ \hline \times \end{array} \end{array}
 \end{array}$$

HCF of 450, 225 and 675 is 75.

$$\begin{array}{r}
 \text{(l) } 522 \overline{)1276} \begin{array}{l} 2 \\ -1044 \\ \hline 232 \end{array} \begin{array}{l} 522 \begin{array}{l} 2 \\ -464 \\ \hline 58 \end{array} \begin{array}{l} 232 \begin{array}{l} 4 \\ -232 \\ \hline \times \end{array} \end{array}
 \end{array}$$

HCF of 522, 1276 and 1682 is 58.

$$\begin{array}{r}
 58 \overline{)1682} \begin{array}{l} 29 \\ -1682 \\ \hline \times \end{array}
 \end{array}$$

2. We know that,

Divisor  $\times$  Quotient = Dividend – Remainder

Now, subtract the remainder from dividends.

$665 - 5 = 660$ ;  $798 - 6 = 792$ ;  $931 - 7 = 924$

$$\begin{array}{r}
 660 \overline{)792} \begin{array}{l} 1 \\ -660 \\ \hline 132 \end{array} \begin{array}{l} 660 \begin{array}{l} 5 \\ -660 \\ \hline \times \end{array} \\
 \hline
 132 \overline{)924} \begin{array}{l} 7 \\ -924 \\ \hline \times \end{array}
 \end{array}$$

$\therefore$  The greatest number is 132.

3.  $\begin{array}{r} 2 \overline{)12} \\ 2 \overline{)6} \\ 3 \overline{)3} \\ \hline 1 \end{array}$   $\begin{array}{r} 2 \overline{)18} \\ 3 \overline{)9} \\ 3 \overline{)3} \\ \hline 1 \end{array}$   $12 = \boxed{2} \times 2 \times \boxed{3}$   
 $18 = \boxed{2} \times 3 \times \boxed{3}$   $\therefore$  The maximum length  
 H.C.F. =  $2 \times 3 = 6$  of equal pieces is 6 cm.

4.  $720 \div 810$

$\therefore$  The greatest number is 90.

$$\begin{array}{r}
 720 \overline{)810} \begin{array}{l} 1 \\ -720 \\ \hline 90 \end{array} \begin{array}{l} 720 \begin{array}{l} 8 \\ -720 \\ \hline 0 \end{array} \end{array}
 \end{array}$$

5. We know that,

$$\text{Divisor} \times \text{Quotient} = \text{Dividend} - \text{Remainder}$$

Now, subtract the remainder from dividends.

$$1492 - 4 = 1488; 1865 - 5 = 1860; 2610 - 6 = 2604$$

$$\begin{array}{r} 1488 \overline{)1860} \left( 1 \right. \\ \underline{-1488} \\ 372 \overline{)1488} \left( 4 \right. \\ \underline{-1488} \\ \hline \times \end{array}$$

$$\begin{array}{r} 372 \overline{)2604} \left( 7 \right. \\ \underline{-2604} \\ \hline \times \end{array}$$

The greatest number is 372.

$\begin{array}{r} 5 \overline{)45} \\ \underline{3} \ 9 \\ \underline{3} \ 3 \\ \hline 1 \end{array}$	$\begin{array}{r} 2 \overline{)18} \\ \underline{3} \ 9 \\ \underline{3} \ 3 \\ \hline 1 \end{array}$	$\begin{array}{r} 2 \overline{)36} \\ \underline{2} \ 18 \\ \underline{3} \ 9 \\ \underline{3} \ 3 \\ \hline 1 \end{array}$	$45 = 5 \times \boxed{3} \times \boxed{3}$ $18 = 2 \times \boxed{3} \times \boxed{3}$ $36 = 2 \times 2 \times \boxed{3} \times \boxed{3}$ H.C.F. = $3 \times 3 = 9$
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∴ Maximum length of equal pieces is 9 cm.

$\begin{array}{r} 2 \overline{)56} \\ \underline{2} \ 28 \\ \underline{2} \ 14 \\ \underline{7} \ 7 \\ \hline 1 \end{array}$	$\begin{array}{r} 2 \overline{)140} \\ \underline{2} \ 70 \\ \underline{7} \ 35 \\ \underline{5} \ 5 \\ \hline 1 \end{array}$	$56 = \boxed{2} \times \boxed{2} \times 2 \times \boxed{7}$ $140 = \boxed{2} \times \boxed{2} \times \boxed{7} \times 5$ H.C.F. = $2 \times 2 \times 7 = 28$
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$\begin{array}{r} 5 \overline{)250} \\ \underline{5} \ 50 \\ \underline{5} \ 10 \\ \underline{2} \ 2 \\ \hline 1 \end{array}$	$\begin{array}{r} 5 \overline{)75} \\ \underline{5} \ 15 \\ \underline{3} \ 3 \\ \hline 1 \end{array}$	$250 = \boxed{5} \times \boxed{5} \times 5 \times 2$ $75 = \boxed{5} \times \boxed{5} \times 3$ H.C.F. = $5 \times 5 = 25$
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∴ 25 square-shaped handkerchief of biggest possible size can be made.

### Exercise 5.4

1. Find the L.C.M. of the following numbers by prime factorization:

(a) $\begin{array}{r} 2 \overline{)8, 12} \\ \underline{2} \ 4, 6 \\ \underline{2} \ 2, 3 \\ \underline{3} \ 1, 3 \\ \hline 1, 1 \end{array}$	(b) $\begin{array}{r} 3 \overline{)9, 21} \\ \underline{3} \ 3, 7 \\ \underline{7} \ 1, 7 \\ \hline 1, 1 \end{array}$	(c) $\begin{array}{r} 5 \overline{)10, 25} \\ \underline{2} \ 2, 5 \\ \underline{5} \ 1, 5 \\ \hline 1, 1 \end{array}$	(d) $\begin{array}{r} 2 \overline{)12, 18} \\ \underline{3} \ 6, 9 \\ \underline{2} \ 2, 3 \\ \underline{3} \ 1, 3 \\ \hline 1, 1 \end{array}$
---	---	--	--

L.C.M.  
=  $2 \times 2 \times 2 \times 3$   
= 24

L.C.M.  
=  $3 \times 3 \times 7$   
= 63

L.C.M.  
=  $5 \times 2 \times 5$   
= 50

L.C.M.  
=  $2 \times 3 \times 2 \times 3$   
= 36

$$(e) \begin{array}{r|l} 2 & 24, 18 \\ \hline 3 & 12, 9 \\ \hline 3 & 4, 3 \\ \hline 4 & 4, 1 \\ \hline & 1, 1 \end{array}$$

L.C.M.

$$= 2 \times 3 \times 3 \times 4 \\ = 72$$

$$(f) \begin{array}{r|l} 2 & 36, 54 \\ \hline 3 & 18, 27 \\ \hline 3 & 6, 9 \\ \hline 2 & 2, 3 \\ \hline 3 & 1, 3 \\ \hline & 1, 1 \end{array}$$

L.C.M.

$$= 2 \times 3 \times 3 \times 2 \\ \times 3 = 108$$

$$(g) \begin{array}{r|l} 10 & 30, 40 \\ \hline 3 & 3, 4 \\ \hline 4 & 1, 4 \\ \hline & 1, 1 \end{array}$$

L.C.M.

$$= 10 \times 3 \times 4 \\ = 120$$

$$(h) \begin{array}{r|l} 2 & 8, 12, 48 \\ \hline 2 & 4, 6, 24 \\ \hline 2 & 2, 3, 12 \\ \hline 2 & 1, 3, 6 \\ \hline 3 & 1, 3, 3 \\ \hline & 1, 1, 1 \end{array}$$

L.C.M.

$$= 2 \times 2 \times 2 \times 2 \\ \times 3 = 48$$

$$(i) \begin{array}{r|l} 3 & 21, 27, 30 \\ \hline 7 & 7, 9, 10 \\ \hline 9 & 1, 9, 10 \\ \hline 10 & 1, 1, 10 \\ \hline & 1, 1, 1 \end{array}$$

$$\text{L.C.M.} = 3 \times 7 \times 9 \times 10 \\ = 1890$$

$$(j) \begin{array}{r|l} 2 & 56, 140, 210 \\ \hline 2 & 28, 70, 105 \\ \hline 7 & 14, 35, 105 \\ \hline 5 & 2, 5, 15 \\ \hline 2 & 2, 1, 3 \\ \hline 3 & 1, 1, 3 \\ \hline & 1, 1, 1 \end{array}$$

$$\text{L.C.M.} = 2 \times 2 \times 7 \times 5 \times 2 \times 3 = 840$$

$$(k) \begin{array}{r|l} 2 & 30, 150, 210 \\ \hline 5 & 15, 75, 105 \\ \hline 3 & 3, 15, 21 \\ \hline 5 & 1, 5, 7 \\ \hline 7 & 1, 1, 7 \\ \hline & 1, 1, 1 \end{array}$$

$$\text{L.C.M.} = 2 \times 5 \times 3 \times 5 \times 7 \\ = 1050$$

$$(l) \begin{array}{r|l} 5 & 105, 135, 240 \\ \hline 3 & 21, 27, 48 \\ \hline 8 & 7, 9, 16 \\ \hline 7 & 7, 9, 2 \\ \hline 9 & 1, 9, 2 \\ \hline 9 & 1, 9, 1 \\ \hline & 1, 1, 1 \end{array}$$

$$\text{L.C.M.} = 5 \times 3 \times 8 \times 7 \times 2 \times 9 \\ = 1680 \times 9 = 15120$$

2. Find the L.C.M. of the following numbers by long division method:

(a) H.C.F. of 8, 10, 12

$$\begin{array}{r} 8 \overline{)10} \langle 1 \\ \underline{-8} \\ 2 \overline{)8} \langle 4 \\ \underline{-8} \\ \times \end{array} \quad \begin{array}{r} 2 \overline{)12} \langle 6 \\ \underline{-12} \\ \times \end{array}$$

$$\begin{array}{r} 2 \overline{)8, 10, 12} \\ \hline 4, 5, 6 \end{array}$$

$$\text{L.C.M.} = 2 \times 4 \times 5 \times 6 \\ = 240$$

(b) H.C.F. of 90, 120, 150

$$\begin{array}{r} 90 \overline{)120} \langle 1 \\ \underline{-90} \\ 30 \overline{)90} \langle 3 \\ \underline{-90} \\ \times \end{array} \quad \begin{array}{r} 30 \overline{)150} \langle 5 \\ \underline{-150} \\ \times \end{array}$$

$$\begin{array}{r} 30 \overline{)90, 120, 150} \\ \hline 3, 4, 5 \end{array}$$

$$\text{L.C.M.} = 30 \times 3 \times 4 \\ \times 5 = 1800$$

(c) H.C.F. of 45, 60 and 75

$$\begin{array}{r} 45 \overline{)60} \langle 1 \\ -45 \\ \hline 15 \overline{)45} \langle 3 \\ -45 \\ \hline \times \end{array}$$

$$\begin{array}{r} 15 \overline{)75} \langle 5 \\ -75 \\ \hline \times \end{array}$$

$$\begin{array}{r} 15 \mid 45, 60, 75 \\ \hline 3, 4, 5 \\ \hline \end{array}$$

$$\text{L.C.M.} = 15 \times 3 \times 4 \times 5 = 900$$

(d) 45, 63 and 36

$$\begin{array}{r} 45 \overline{)63} \langle 1 \\ -45 \\ \hline 18 \overline{)45} \langle 2 \\ -36 \\ \hline 9 \overline{)18} \langle 2 \\ -18 \\ \hline \times \end{array}$$

$$\begin{array}{r} 9 \overline{)36} \langle 4 \\ -36 \\ \hline \times \end{array}$$

$$\begin{array}{r} 9 \mid 45, 63, 36 \\ \hline 5, 7, 4 \\ \hline \end{array}$$

$$\text{L.C.M.} = 9 \times 5 \times 7 \times 4 = 1260$$

(e) 75, 150, 225

$$\begin{array}{r} 75 \overline{)150} \langle 2 \\ -150 \\ \hline \times \end{array}$$

$$\begin{array}{r} 75 \overline{)225} \langle 3 \\ -225 \\ \hline \times \end{array}$$

$$\begin{array}{r} 75 \mid 75, 150, 225 \\ \hline 1, 2, 3 \\ \hline \end{array}$$

$$\text{L.C.M.} = 75 \times 2 \times 3 = 450$$

(f) 15, 20, 25

$$\begin{array}{r} 15 \overline{)20} \langle 1 \\ -15 \\ \hline 5 \overline{)15} \langle 3 \\ -15 \\ \hline \times \end{array}$$

$$\begin{array}{r} 5 \overline{)25} \langle 5 \\ -25 \\ \hline \times \end{array}$$

$$\begin{array}{r} 5 \mid 15, 20, 25 \\ \hline 3, 4, 5 \\ \hline \end{array}$$

$$\text{L.C.M.} = 5 \times 3 \times 4 \times 5 = 300$$

(g) H.C.F. of 105, 91, 130

$$\begin{array}{r} 91 \overline{)105} \langle 1 \\ -91 \\ \hline 14 \overline{)91} \langle 6 \\ -84 \\ \hline 7 \overline{)14} \langle 2 \\ -14 \\ \hline \times \end{array}$$

$$\begin{array}{r} 7 \overline{)130} \langle 18 \\ -126 \\ \hline 4 \overline{)7} \langle 1 \\ -4 \\ \hline 3 \overline{)4} \langle 1 \\ -3 \\ \hline 1 \overline{)3} \langle 3 \\ -3 \\ \hline \times \end{array}$$

$$\begin{array}{r} 5 \mid 105, 91, 130 \\ 3 \mid 21, 91, 26 \\ 7 \mid 7, 91, 26 \\ 2 \mid 1, 13, 26 \\ 13 \mid 1, 13, 13 \\ \hline 1, 1, 1 \end{array}$$

$$\text{L.C.M.} = 5 \times 3 \times 7 \times 2 \times 13 = 2730$$

(h) 1176, 2352, 1568

$$\begin{array}{r} 1176 \overline{) 2352} \quad (2 \\ \underline{2352} \\ \times \end{array}$$

$$\begin{array}{r} 1176 \overline{) 1568} \quad (1 \\ \underline{-1176} \\ 392 \overline{) 1176} \quad (3 \\ \underline{-1176} \\ \times \end{array}$$

$$\begin{array}{r} 392 \mid 1176, 2352, 1568 \\ \hline 3, \quad 6, \quad 4 \end{array}$$

$$\begin{aligned} \text{L.C.M.} &= 392 \times 3 \times 6 \times 4 \\ &= 28224 \end{aligned}$$

### Exercise 5.5

Tick (✓) the correct answer:

1. (b) 
$$\begin{array}{r} 2 \mid 72, 90 \\ \hline 3 \mid 36, 45 \\ \hline 3 \mid 12, 15 \\ \hline 4, 5 \end{array}$$

$$\begin{aligned} \text{L.C.M.} &= 2 \times 3 \times 3 \\ &= 18 \end{aligned}$$

2. (d) 
$$\begin{array}{r} 38 \overline{) 51} \quad (1 \\ \underline{-38} \\ 13 \overline{) 38} \quad (2 \\ \underline{-26} \\ 12 \overline{) 13} \quad (1 \\ \underline{-12} \\ 1 \overline{) 12} \quad (12 \\ \underline{-12} \\ \times \end{array}$$

3. (c) 
$$\begin{array}{r} 2 \mid 6, 10 \\ \hline 3 \mid 3, 5 \\ \hline 5 \mid 1, 5 \\ \hline 1, 1 \end{array}$$

$$\begin{aligned} \text{L.C.M.} &= 2 \times 3 \times 5 \\ &= 30 \end{aligned}$$

4. (a) 
$$\begin{array}{r} 3 \mid 15, 36, 40 \\ \hline 2 \mid 5, 12, 40 \\ \hline 2 \mid 5, 6, 20 \\ \hline 5 \mid 5, 3, 10 \\ \hline 3 \mid 1, 3, 2 \\ \hline 2 \mid 1, 1, 2 \\ \hline 1, 1, 1 \end{array}$$

$$\begin{aligned} \text{L.C.M.} &= 3 \times 2 \times 2 \times 5 \times \\ &3 \times 2 = 360 \end{aligned}$$

5. (a) Product of two no. = H.C.F.  $\times$  L.C.M.

$$\text{L.C.M.} = \frac{\text{Product of two no.}}{\text{H.C.F.}}$$

$$= \frac{320}{4} = 80$$

$$\text{L.C.M.} = 80$$

## Chapter-6 (Operations On Common Fractions)

### Exercise 6.1

1. Simplify :

(a)  $\frac{12}{20} = \frac{6}{10} = \frac{3}{5}$

(b)  $\frac{18}{45} = \frac{6}{15} = \frac{2}{5}$

(c)  $\frac{8}{12} = \frac{4^2}{6 \times 3} = \frac{2}{3}$

(d)  $\frac{25}{30} = \frac{5}{6}$

2. Fill in the boxes with  $>$  or  $<$  :

(a)  $\frac{1}{4} \square \frac{1}{2}$       (b)  $\frac{3}{18} \square \frac{3}{8}$       (c)  $\frac{1}{14} \square \frac{1}{12}$       (d)  $\frac{4}{8} \square \frac{2}{3}$

3. Write in ascending order :

(a)  $\frac{2}{24}, \frac{2}{12}, \frac{2}{11}, \frac{2}{10}$       (b)  $\frac{5}{28}, \frac{5}{20}, \frac{5}{18}, \frac{5}{16}$       (c)  $\frac{9}{21}, \frac{9}{18}, \frac{9}{12}, \frac{9}{5}$

4. Write in descending order :

(a)  $\frac{2}{4}, \frac{3}{7}, \frac{3}{8}, \frac{1}{9}$       (b)  $\frac{4}{2}, \frac{4}{16}, \frac{1}{5}, \frac{3}{18}$       (c)  $\frac{8}{16}, \frac{3}{7}, \frac{5}{12}, \frac{7}{18}$

5. Write mixed fractions for the following fractions :

(a)  $\frac{42}{4} = 10\frac{2}{4}$       (b)  $\frac{19}{6} = 3\frac{1}{6}$       (c)  $\frac{35}{9} = 3\frac{8}{9}$       (d)  $\frac{86}{8} = 10\frac{6}{8}$

6. Fill in  $>$  or  $<$  :

(a)  $2\frac{8}{16} \square \frac{12}{16}$       (b)  $\frac{12}{4} \square 3\frac{6}{7}$       (c)  $\frac{18}{6} \square 2\frac{9}{6}$

7. Add :

(a)  $\frac{5}{12} + \frac{6}{10} + \frac{12}{19} = \frac{475 + 684 + 720}{1140} = \frac{1879}{1140}$   
(b)  $2\frac{6}{3} + 5\frac{4}{2} + 2\frac{2}{8} = \frac{12}{3} + \frac{14}{2} + \frac{18}{8} = \frac{96 + 168 + 54}{24} = \frac{318}{24}$

8. Subtract :

(a)  $3\frac{6}{4}$  from  $9\frac{2}{5} = \frac{47}{5} - \frac{18}{4} = \frac{188 - 90}{20} = \frac{98}{20}$   
(b)  $2\frac{4}{3}$  from  $5\frac{6}{5} = \frac{31}{5} - \frac{10}{3} = \frac{31 - 20}{6} = \frac{11}{6}$

### Exercise 6.2

1. Add :

(a)  $\frac{2}{3} + \frac{4}{6} = \frac{4+4}{6} = \frac{8}{6} = \frac{4}{3}$       (b)  $\frac{1}{4} + \frac{1}{28} = \frac{7+1}{28} = \frac{8}{28} = \frac{2}{7}$   
(c)  $\frac{5}{16} + \frac{2}{20} = \frac{25+8}{80} = \frac{33}{80}$       (d)  $\frac{2}{10} + \frac{1}{16} + \frac{5}{8} = \frac{16+5+50}{80} = \frac{71}{80}$   
(e)  $\frac{5}{4} + \frac{5}{3} + \frac{11}{6} = \frac{15+20+22}{12} = \frac{57}{12}$   
(f)  $\frac{9}{6} + \frac{12}{16} + \frac{12}{10} = \frac{360+180+288}{240} = \frac{828}{240}$   
(g)  $\frac{2}{6} + \frac{1}{7} + \frac{9}{12} = \frac{28+12+63}{84} = \frac{103}{84}$   
(h)  $\frac{25}{16} + \frac{56}{17} + \frac{12}{8} = \frac{425+896+408}{272} = \frac{1792}{272}$

$$(i) \frac{20}{6} + \frac{7}{2} + \frac{42}{16} = \frac{80 + 84 + 84}{24} = \frac{248}{24}$$

2. Subtract :

$$(a) \frac{23}{12} - \frac{4}{3} = \frac{23 - 16}{12} = \frac{7}{12}$$

$$(b) \frac{4}{7} - \frac{2}{5} = \frac{20 - 14}{35} = \frac{6}{35}$$

$$(c) \frac{5}{9} - \frac{3}{6} = \frac{10 - 9}{18} = \frac{1}{18}$$

$$(d) \frac{29}{8} - \frac{26}{8} = \frac{3}{8}$$

$$(e) \frac{121}{12} - \frac{53}{12} = \frac{121 - 53}{12} = \frac{68}{12} = \frac{17}{3}$$

$$(f) \frac{9}{1} - \frac{19}{8} = \frac{72 - 19}{8} = \frac{53}{8}$$

3. Multiply :

$$(a) 3 \times \frac{5}{3} = 5$$

$$(b) 6 \times \frac{27}{10} = \frac{162}{10}$$

$$(c) 8 \times \frac{8}{5} = \frac{64}{5}$$

$$(d) 2 \times \frac{23}{6} = \frac{23}{3}$$

$$(e) 4 \times \frac{13}{8} = \frac{13}{2}$$

$$(f) 9 \times \frac{32}{5} = \frac{288}{5}$$

4. Multiply :

$$(a) \frac{5}{3} \times 2 = \frac{10}{3}$$

$$(b) \frac{6}{7} \times 8 = \frac{48}{7}$$

$$(c) \frac{11}{3} \times 2 = \frac{22}{3}$$

$$(d) \frac{26}{7} \times 3 = \frac{78}{7}$$

$$(e) \frac{16}{3} \times 7 = \frac{112}{3}$$

$$(f) \frac{31}{19} \times 5 = \frac{155}{19}$$

5. Multiply and reduce to the lowest term :

$$(a) 2 \times \frac{3}{7} = \frac{6}{7}$$

$$(b) 6 \times \frac{7}{4} = \frac{42}{4} = \frac{21}{2}$$

$$(c) 8 \times \frac{13}{6} = \frac{104}{6} = \frac{52}{3}$$

$$(d) 8 \times \frac{12}{11} = \frac{96}{11}$$

$$(e) 4 \times \frac{2}{9} = \frac{8}{9}$$

$$(f) 9 \times \frac{6}{13} = \frac{54}{13}$$

### Exercise 6.3

1. Find :

$$(a) \frac{1}{3} \times 5 = \frac{5}{3}$$

$$(b) \frac{2}{5} \times 8 = \frac{16}{5}$$

$$(c) \frac{3}{7} \times \frac{4}{9} = \frac{12}{63} = \frac{4}{21}$$

$$(d) \frac{1}{4} \times \frac{3}{7} = \frac{3}{28}$$

$$(e) \frac{4}{7} \times \frac{2}{9} = \frac{8}{63}$$

$$(f) \frac{3}{5} \times \frac{1}{8} = \frac{3}{40}$$

$$(g) \frac{2}{9} \times \frac{20}{11} = \frac{40}{99}$$

$$(h) \frac{32}{29} \times \frac{11}{9} = \frac{352}{261}$$

2. Multiply :

$$(a) \frac{2}{5} \times \frac{3}{8} \times \frac{12}{19} = \frac{9}{95}$$

$$(b) \frac{3}{7} \times \frac{8}{11} \times \frac{7}{9} = \frac{8}{33}$$

$$(c) \frac{11}{9} \times \frac{23}{24} \times \frac{9}{33} = \frac{23}{72}$$

$$(d) \frac{19}{33} \times \frac{35}{47} \times \frac{20}{23} = \frac{13300}{35673}$$

$$(e) \frac{7}{6} \times \frac{11}{4} = \frac{77}{24}$$

$$(g) \frac{23}{5} \times \frac{5}{3} \times \frac{11}{2} = \frac{253}{6}$$

$$(i) \frac{85}{41} \times \frac{43}{38} \times \frac{29}{12} = \frac{105995}{18696}$$

$$(f) \frac{90}{11} \times \frac{39}{11} = \frac{3510}{121}$$

$$(h) \frac{31}{19} \times \frac{14}{9} \times \frac{24}{33} = \frac{3472}{1881}$$

3. Fill in the blanks :

$$(a) \frac{5}{9} \times 0 = 0$$

$$(b) \frac{12}{19} \times 1 = \frac{12}{19}$$

$$(c) \frac{21}{8} \times 1 = \frac{21}{8}$$

$$(d) 5 \frac{8}{11} \times 1 = 5 \frac{8}{11}$$

$$(e) \frac{2}{5} \times \frac{9}{7} = \frac{9}{7} \times \frac{2}{5}$$

$$(f) \frac{1}{8} \times \frac{12}{19} = \frac{12}{19} \times \frac{1}{8}$$

$$(g) \frac{5}{9} \times \frac{3}{5} = \frac{3}{9} \times \frac{5}{5}$$

$$(h) \frac{2}{5} \times \frac{1}{8} \times \frac{12}{11} = \frac{2}{5} \times \frac{1}{8} \times \frac{12}{11}$$

$$(i) \frac{28}{33} \times \frac{9}{7} \times \frac{43}{25} = \frac{28}{33} \times \frac{9}{7} \times \frac{43}{25}$$

$$(j) \frac{39}{43} \times \frac{1}{19} = \frac{1}{19} \times \frac{39}{43}$$

$$(k) 5 \times \frac{1}{5} = 1$$

$$(l) 9 \times \frac{1}{9} = 1$$

$$(m) \frac{1}{13} \times 13 = 1$$

$$(n) \frac{1}{8} \times 8 = 1$$

$$(o) \frac{1}{13} \times 13 = 1$$

$$(p) \frac{12}{19} \times \frac{19}{12} = 1$$

$$(q) \frac{15}{2} \times \frac{2}{15} = 1$$

$$(r) 9 \times \frac{1}{9} = 1$$

$$(s) \frac{2}{3} \times \frac{3}{2} = 1$$

$$(t) \frac{1}{10} \times 10 = 1$$

$$(u) \frac{13}{8} \times \frac{8}{13} = 1$$

$$(v) \frac{24}{35} \times \frac{35}{24} = 1$$

4. Write the reciprocal or multiplicative inverse of the following numbers :

$$(a) 18 = \frac{1}{18}$$

$$(b) \frac{1}{19} = 19$$

$$(c) \frac{8}{5} = \frac{5}{8}$$

$$(d) \frac{3}{10} = \frac{10}{3}$$

$$(e) \frac{17}{8} = \frac{8}{17}$$

$$(f) \frac{68}{9} = \frac{9}{68}$$

### Exercise 6.4

1. Find :

$$(a) \frac{1}{5} \div 6 = \frac{1}{5} \times \frac{1}{6} = \frac{1}{30}$$

$$(b) \frac{1}{8} \div 3 = \frac{1}{8} \times \frac{1}{3} = \frac{1}{24}$$

$$(c) \frac{1}{9} \div 13 = \frac{1}{9} \times \frac{1}{13} = \frac{1}{117}$$

$$(d) \frac{2}{5} \div 5 = \frac{2}{5} \times \frac{1}{5} = \frac{2}{25}$$

$$(e) \frac{8}{5} \div 8 = \frac{8}{5} \times \frac{1}{8} = \frac{1}{5}$$

$$(f) \frac{16}{7} \div 3 = \frac{16}{7} \times \frac{1}{3} = \frac{16}{21}$$

$$(g) \frac{57}{7} \div 20 = \frac{57}{7} \times \frac{1}{20} = \frac{57}{140}$$

$$(h) \frac{32}{9} \div 52 = \frac{32}{9} \times \frac{1}{52} = \frac{32}{468} = \frac{8}{117}$$

2. Divide :

$$(a) \frac{2}{7} \div 2 = \frac{2}{7} \times \frac{1}{2} = \frac{1}{7}$$

$$(b) \frac{7}{9} \div 5 = \frac{7}{9} \times \frac{1}{5} = \frac{7}{45}$$

$$(c) \frac{18}{23} \div 17 = \frac{18}{23} \times \frac{1}{17} = \frac{18}{391}$$

$$(d) \frac{32}{21} \div 6 = \frac{32}{21} \times \frac{1}{6} = \frac{16}{63}$$

$$(e) \frac{9}{13} \div 19 = \frac{9}{13} \times \frac{1}{19} = \frac{9}{247}$$

$$(f) \frac{23}{9} \div 9 = \frac{23}{9} \times \frac{1}{9} = \frac{23}{81}$$

3. Find :

$$(a) 2 \div \frac{3}{5} = 2 \times \frac{5}{3} = \frac{10}{3}$$

$$(b) 7 \div \frac{1}{12} = 7 \times \frac{12}{1} = \frac{84}{1}$$

$$(c) 25 \div \frac{12}{5} = 25 \times \frac{5}{12} = \frac{125}{12}$$

$$(d) 86 \div \frac{19}{9} = 86 \times \frac{9}{19} = \frac{774}{19}$$

$$(e) 36 \div \frac{4}{3} = 36 \times \frac{3}{4} = \frac{108}{4} = 27$$

$$(f) 24 \div \frac{32}{9} = 24 \times \frac{9}{32} = \frac{216}{32}$$

$$(g) 13 \div \frac{7}{5} = 13 \times \frac{5}{7} = \frac{65}{7}$$

$$(h) 52 \div \frac{89}{11} = 52 \times \frac{11}{89} = \frac{572}{89}$$

4. Find :

$$(a) \frac{5}{3} \div \frac{1}{5} = \frac{5}{3} \times \frac{5}{1} = \frac{25}{3}$$

$$(b) \frac{41}{7} \div \frac{1}{7} = \frac{41}{7} \times \frac{7}{1} = 41$$

$$(c) \frac{38}{5} \div \frac{2}{19} = \frac{38}{5} \times \frac{19}{2} = \frac{361}{5}$$

$$(d) \frac{11}{5} \div \frac{23}{7} = \frac{11}{5} \times \frac{7}{23} = \frac{77}{115}$$

$$(e) \frac{21}{8} \div \frac{10}{19} = \frac{21}{8} \times \frac{19}{10} = \frac{399}{80}$$

$$(f) \frac{67}{13} \div \frac{28}{11} = \frac{67}{13} \times \frac{11}{28} = \frac{737}{364}$$

$$(g) \frac{27}{13} \div \frac{2}{23} = \frac{27}{13} \times \frac{23}{2} = \frac{621}{26}$$

$$(h) \frac{196}{23} \div \frac{84}{19} = \frac{196}{23} \times \frac{19}{84} = \frac{133}{69} = \frac{7}{23} \times \frac{19}{3} = \frac{133}{69}$$

5. Fill in the blanks :

$$(a) \frac{3}{8} \div 1 = \boxed{\frac{3}{8}}$$

$$(b) \frac{5}{17} \div \boxed{1} = \frac{5}{17}$$

$$(c) \boxed{\frac{3}{9}} \div 1 = 3 \frac{8}{9}$$

$$(d) 0 \div 3 \frac{5}{7} = \boxed{0}$$

$$(e) 2 \frac{8}{7} \div \frac{22}{7} = \boxed{1}$$

$$(f) \boxed{\frac{9}{16}} \div 9 \frac{3}{16} = 1$$

### Exercise 6.5

1. Apple juice added =  $\frac{4}{7} l$

Orange juice added =  $\frac{1}{2} l$

$$\text{Fruit punch Reena had} = \frac{4}{7} + \frac{1}{2} = \frac{8+7}{14} = \frac{15}{14} l$$

Thus, Reena have  $\frac{15}{14} l$  of fruit punch.

2. Total length of ribbon =  $5\frac{1}{8} \text{ m} = \frac{41}{8} \text{ m}$

$$\text{Ribbon used} = 2\frac{1}{3} \text{ m} = \frac{7}{3} \text{ m}$$

$$\text{Ribbon left} = \frac{41}{8} - \frac{7}{3} = \frac{123 - 56}{24} = \frac{67}{24}$$

Thus, Ribbon left with Rohit =  $\frac{67}{24} \text{ m}$ .

3. Free time with John =  $\frac{6}{13} \text{ hr}$

$$\text{Time spent in cleaning room} = \frac{2}{5} \text{ hr}$$

$$\text{Left with John} = \frac{6}{13} - \frac{2}{5} = \frac{30 - 26}{65} = \frac{4}{65}$$

Thus, time left with John is  $\frac{4}{65}$  hours.

4. Flour Anita have =  $\frac{9}{11} \text{ kg}$

$$\text{Flour used in making chapattis} = \frac{3}{5} \text{ kg}$$

$$\text{Flour left with Anita} = \frac{9}{11} - \frac{3}{5} = \frac{45 - 33}{55} = \frac{12}{55}$$

Thus,  $\frac{12}{55} \text{ kg}$  of flour is left with Anita.

5. Rahul practices guitar in a week =  $5\frac{1}{7} = \frac{36}{7} \text{ hr}$

$$\text{Rahul practices guitar in a day} = 1\frac{2}{7} = \frac{9}{7} \text{ hr}$$

$$\text{Total number of days} = \frac{36}{7} \div \frac{9}{7} = \frac{324}{49} = \frac{36}{7} \times \frac{7}{9} = 4$$

### Exercise 6.6

Tick the (✓) correct answer :

1. (b)  $3\frac{5}{7} + \frac{11}{8} + 2\frac{1}{3}$

$$= \frac{26}{7} + \frac{11}{8} + \frac{7}{3} = \frac{624 + 231 + 392}{168} = \frac{1247}{168}$$

2. (a)  $5\frac{6}{3} - 3\frac{7}{5} = \frac{21}{3} - \frac{22}{5} = \frac{105 - 66}{15} = \frac{39}{15}$
3. (d)  $7 \times \frac{19}{8} = \frac{133}{8}$
4. (c)  $\frac{19}{11} \div \frac{38}{44} = \frac{19}{11} \times \frac{44}{38} = \frac{76}{38} = 2$
5. (a)  $20 \div 2\frac{1}{2} = 20 \div \frac{5}{2} = 20 \times \frac{2}{5} = 8$

### Test Paper-I

1. Write the roman numerals for the following Hindu-arabic numerals :  
 (a) 10 = X (b) 19 = XIX (c) 98 = XCVIII  
 (d) 159 = CLIX (e) 783 = DCCLXXXIII
2. Write the number names for the following numerals in the international system:  
 (a) 1586342 = One million five hundred eighty six thousand three hundred forty two.  
 (b) 3563742 = Three million five hundred sixty three thousand seven hundred forty two.  
 (c) 9157482 = Nine million one hundred fifty seven thousand four hundred eighty two.

3. Solve :

$$\begin{array}{r} 5\ 2\ 6\ 3\ 1\ 9 \\ 2\ 3\ 9\ 2\ 5 \\ + 1\ 5\ 3\ 2 \\ \hline 5\ 5\ 1\ 7\ 7\ 6 \end{array}$$

$$\begin{array}{r} 9803413 \\ - 5726798 \\ \hline 4076615 \end{array}$$

$$\begin{array}{r} 315836 \\ 218797 \\ + 181523 \\ \hline 716156 \end{array}$$

4. Find the prime factorization of the following numbers using division method:

$$\begin{array}{r} 2 \mid 24 \\ 2 \mid 12 \\ 2 \mid 6 \\ 2 \mid 3 \\ \hline 3 \end{array}$$

$$= 2 \times 2 \times 2 \times 3$$

$$\begin{array}{r} 2 \mid 50 \\ 5 \mid 25 \\ 5 \mid 5 \\ \hline 1 \end{array}$$

$$= 2 \times 5 \times 5$$

$$\begin{array}{r} 2 \mid 10 \\ 5 \mid 5 \\ \hline 1 \end{array}$$

$$= 2 \times 5$$

$$\begin{array}{r} 2 \mid 6 \\ 3 \mid 3 \\ \hline 1 \end{array}$$

$$= 2 \times 3$$

$$\begin{array}{r} 2 \mid 84 \\ 2 \mid 42 \\ 3 \mid 21 \\ 7 \mid 7 \\ \hline 1 \end{array}$$

$$= 2 \times 2 \times 3 \times 7$$

5. Find the L.C.M. of the following numbers by prime factorizations :

$$\begin{array}{r} 3 \mid 9, 21 \\ 3 \mid 3, 7 \\ 7 \mid 1, 7 \\ \hline 1, 1 \end{array}$$

$$\text{LCM} = 3 \times 3 \times 7$$

$$= 63$$

$$\begin{array}{r} 2 \mid 12, 18 \\ 3 \mid 6, 9 \\ 2 \mid 2, 3 \\ 3 \mid 1, 3 \\ \hline 1, 1 \end{array}$$

$$\text{LCM} = 2 \times 3 \times 2$$

$$\times 3 = 36$$

$$\begin{array}{r} 2 \mid 36, 54 \\ 3 \mid 18, 27 \\ 3 \mid 6, 9 \\ 2 \mid 2, 3 \\ 3 \mid 1, 3 \\ \hline 1, 1 \end{array}$$

$$\text{LCM} = 2 \times 3 \times 3$$

$$\times 2 \times 3 = 108$$

6. Write the reciprocal or multiplicative inverse of the following numbers:
- (a)  $19 = \frac{1}{19}$       (b)  $\frac{1}{28} = 28$       (c)  $54 = \frac{1}{54}$
7. Fill in the blanks :
- (a) V and L are not subtracted.  
 (b) I and C are repeated not more than 3  
 (c) 1000 thousands make a million  
 (d) A composite number has at least three or more factors.  
 (e) The reciprocal of 39 is  $\frac{1}{39}$
8. Tick (✓) the correct answer:
- (a) iii    (b) iii    (c) ii    (d) iii    (e) ii

## Chapter-7 (Decimal Fractions)

### Exercise 7.1

1. Change in decimal notation :
- (a)  $\frac{7}{10} = 0.7$       (b)  $\frac{12}{10} = 1.2$       (c)  $\frac{3}{100} = 0.03$   
 (d)  $\frac{18}{10} = 1.8$       (e)  $\frac{21}{100} = 0.21$       (f)  $\frac{223}{1000} = 0.223$
2. Reduce and write the number name :
- (a) Two point four five.  
 (b) Three point zero seven.  
 (c) Twenty one point three five  
 (d) Two hundred sixteen point three six.  
 (e) Five point two three two.
3. Write the place and place value :
- (a)  $36.7 = 3$  is in the tens place with value 30  
 (b)  $23.5 = 5$  is in the tenth place value 0.5  
 (c)  $13.046 = 6$  is in the thousandths place with place value 0.006  
 (d)  $5.478 = 7$  is in the hundredth place with place value 0.07
4. Write the place value of each digit in 28.324  
 20; 8; 0.3; 0.02; 0.004
5. Write 32.482 expanded form (common fractions and decimal fractions both)
- $$30 + 2 + \frac{4}{10} + \frac{8}{100} + \frac{2}{1000}$$
6. Write the standard form of decimal :
- (a)  $6 + \frac{8}{10} + \frac{4}{100} + \frac{5}{1000} = 6 + 0.8 + 0.04 + 0.005 = 6.845$

- (b)  $\frac{3}{10} + \frac{7}{100} + \frac{6}{1000} = 0.3 + 0.07 + 0.006 = 0.376$
- (c)  $40 + 2 + .3 + .04 + .009 = 42.349$
7. Are the following equivalent fraction? Write 'yes' or 'No'
- (a) .7 and .700 = Yes  
 (b) 0.26 and .260 = Yes  
 (c) .5 and .05 = No  
 (d) .6 and .60 = Yes
8. Write > or < :
- (a)  $0.3 \square 1.784$  (b)  $0.87 \square 0.9$   
 (c)  $0.8 \square 0.79$  (d)  $4.081 \square 4.08$
9. Rewrite in ascending order :
- (a) 0.88; 1.1; 5.09; 8.08  
 (b) 0.03; 0.13; 1.003; 1.03  
 (c) 14.30; 14.9; 15; 15.01
10. Find the sum :
- (a)  $12.01 + 1.1 + 1.73$  (b)  $13.07 + 71.03 + 1.463$  (c)  $4.87 + 3.807 + 38.7$
- |   |   |   |
|---|---|---|
| $\begin{array}{r} 12.01 \\ + 1.1 \\ + 1.73 \\ \hline 14.84 \end{array}$ | $\begin{array}{r} 13.07 \\ 71.03 \\ + 1.463 \\ \hline 85.563 \end{array}$ | $\begin{array}{r} 4.87 \\ + 3.807 \\ + 38.7 \\ \hline 47.377 \end{array}$ |
|---|---|---|
11. Find the difference :
- (a)  $35.2 - 17.28$  (b)  $6 - 3.21$  (c)  $11.01 - 10.11$  (d)  $4.1 - 3.107$
- |   |  |  |   |
|---|--|--|---|
| $\begin{array}{r} 35.20 \\ - 17.28 \\ \hline 17.92 \end{array}$ | $\begin{array}{r} 6.00 \\ - 3.21 \\ \hline 2.79 \end{array}$ | $\begin{array}{r} 11.01 \\ - 10.11 \\ \hline 0.90 \end{array}$ | $\begin{array}{r} 4.100 \\ - 3.107 \\ \hline 0.993 \end{array}$ |
|---|--|--|---|
12. Multiply :
- (a)  $1.23 \times 16$  (b)  $9.8 \times 28$  (c)  $2.34 \times 18$  (d)  $57.64 \times 32$
- |   |  |  |  |
|---|--|--|--|
| $\begin{array}{r} 1.23 \\ \times 16 \\ \hline 738 \\ 1230 \\ \hline 1968 \end{array}$ | $\begin{array}{r} 9.8 \\ \times 28 \\ \hline 784 \\ 1960 \\ \hline 2744 \end{array}$ | $\begin{array}{r} 2.34 \\ \times 18 \\ \hline 1872 \\ 2340 \\ \hline 4212 \end{array}$ | $\begin{array}{r} 57.64 \\ \times 32 \\ \hline 11528 \\ 11528 \\ \hline 1844.48 \end{array}$ |
|---|--|--|--|

### Exercise 7.2

1. Give the expression in decimal fraction and common fractions of the following:

(a)  $8 + 0.7 + 0.005$ ;  $8 + \frac{7}{10} + \frac{9}{100} + \frac{5}{1000}$

- (b)  $20 + 0.03 + 0.004$ ;  $20 + 7 + \frac{3}{100} + \frac{4}{1000}$
- (c)  $40 + 5 + 0.9 + 0.08 + 0.002$ ;  $40 + 5 + \frac{9}{10} + \frac{8}{100} + \frac{2}{1000}$
- (d)  $200 + 80 + 5 + 0.8 + 0.08$ ;  $200 + 80 + 5 + \frac{8}{10} + \frac{8}{100}$
- (e)  $90 + 8 + 0.3$ ;  $90 + 8 + \frac{3}{10}$

2. Write the decimal fraction for each :

- (a)  $7 + \frac{5}{10} + \frac{9}{100} + \frac{1}{1000} = 7 + 0.5 + 0.09 + 0.001 = 7.591$
- (b)  $7 + \frac{3}{10} + \frac{9}{1000} = 7 + 0.3 + 0.009 = 7.309$
- (c)  $50 + 2 + \frac{9}{100} + \frac{7}{1000} = 50 + 21 + 0.09 + 0.007 = 52.097$
- (d)  $30 + \frac{7}{100} = 30 + 0.07 = 30.07$
- (e)  $60 + 4 + \frac{9}{1000} = 60 + 4 + 0.009 = 64.009$
- (f)  $\frac{7}{10} + \frac{9}{100} + \frac{3}{1000} = 0.7 + 0.09 + 0.003 = 0.793$

3. Fill in the blanks with equivalent decimal fractions :

- (a)  $0.5 = 0.50 = \boxed{0.500}$       (b)  $1.3 = 1.30 = \boxed{1.300}$
- (c)  $34.2 = 34.20 = \boxed{34.200}$       (d)  $\boxed{10.3} = 10.300 = \boxed{10.30}$
- (e)  $3.7 = \boxed{3.70} = 3.700$       (f)  $68.3 = \boxed{68.30} = 68.300$

4. Write  $>$ ,  $<$  or  $=$  :

- (a)  $50.04 \square 50.4$       (b)  $7.7 \square 7.007$       (c)  $7.3 \square 7.268$
- (d)  $0.4 \square 0.14$       (e)  $9.99 \square 9.999$       (f)  $5.081 \square 5.08$
- (g)  $3.4 \square 3.400$       (h)  $0.2 \square 1.999$       (i)  $0.76 \square 0.760$
- (h)  $0.2 \square 1.999$

5. Rewrite in ascending order :

- (a) 1.019; 1.09; 1.90; 1.91      (b) 2.37; 2.7; 3.01; 3.11
- (c) 5; 5.12; 5.21; 5.3      (d) 9.09; 9.10; 10.01

6. Rewrite in descending order :

- (a) 2.25; 2.05; 0.25; 0.05      (b) 2.91; 2.9; 2.09; 2.019
- (c) 1.1; 1.09; 1.010; 0.99      (d) 19.99; 1.999; 1.99; 0.999

### Exercise 7.3

1. Convert the following common fractions into decimal fractions :

- (a)  $\frac{3}{10} = 0.3$       (b)  $\frac{29}{100} = 0.29$       (c)  $\frac{9}{100} = 0.09$

$$(d) \frac{25}{100} = 0.25 \quad (e) \frac{137}{1000} = 0.137 \quad (f) \frac{117}{100} = 1.17$$

$$(g) \frac{2009}{1000} = 2.009 \quad (h) \frac{565}{10} = 56.5$$

2. Convert the following decimal fractions into common fractions :

$$(a) 0.4 = \frac{4}{10} \quad (b) 0.24 = \frac{24}{100}$$

$$(c) 0.742 = \frac{742}{1000} \quad (d) 1.03 = \frac{103}{100}$$

$$(e) 0.09 = \frac{9}{100}$$

### Exercise 7.4

1. Find the sum :

$$(a) \begin{array}{r} \textcircled{2} \\ 3 \cdot 4 \\ 5 \cdot 9 \\ + 6 \cdot 7 \\ \hline 16 \cdot 0 \end{array}$$

$$(b) \begin{array}{r} \textcircled{1} \\ 2 \cdot 003 \\ 0 \cdot 7 \\ + 16 \cdot 79 \\ \hline 19 \cdot 493 \end{array}$$

$$(c) \begin{array}{r} \textcircled{1} \\ 1 \cdot 83 \\ \textcircled{1} 1 \cdot 803 \\ + 18 \cdot 3 \\ \hline 21 \cdot 933 \end{array}$$

$$(d) \begin{array}{r} \textcircled{1} \textcircled{1} \\ 7 \cdot 25 \\ \textcircled{1} 2 \cdot 45 \\ + 12 \cdot 75 \\ \hline 22 \cdot 45 \end{array}$$

$$(e) \begin{array}{r} \textcircled{1} \\ 9 \cdot 85 \\ 0 \cdot 61 \\ + 0 \cdot 40 \\ \hline 10 \cdot 86 \end{array}$$

2. Subtract :

$$(a) \begin{array}{r} \textcircled{0} \textcircled{15} \textcircled{1} \textcircled{10} \\ \cancel{X} \cancel{X} \cdot 1 \cancel{0} \\ 9 \cdot 25 \\ \hline 6 \cdot 85 \end{array}$$

$$(b) \begin{array}{r} \textcircled{7} \textcircled{14} \textcircled{10} \\ \cancel{X} \cancel{X} \cdot \cancel{X} \cancel{0} \\ - 16 \cdot 75 \\ \hline 1 \cdot 75 \end{array}$$

$$(c) \begin{array}{r} \textcircled{6} \textcircled{9} \textcircled{10} \\ \cancel{7} \cdot \cancel{0} \cancel{0} \\ - 4 \cdot 32 \\ \hline 2 \cdot 68 \end{array}$$

3. Find the difference :

$$(a) \begin{array}{r} 12 \cdot 35 \\ - 7 \cdot 00 \\ \hline 5 \cdot 35 \end{array}$$

$$(b) \begin{array}{r} \textcircled{4} \textcircled{13} \\ \cancel{X} \cdot \cancel{X} \cancel{7} \\ - 0 \cdot 75 \\ \hline 4 \cdot 62 \end{array}$$

$$(c) \begin{array}{r} \textcircled{0} \textcircled{10} \\ 1 \cancel{X} \cdot \cancel{0} \cancel{1} \\ - 10 \cdot 11 \\ \hline 0 \cdot 90 \end{array}$$

### Exercise 7.5

1. Multiply :

$$(a) 0.5 \times 10 = 5.0 \quad (b) 0.3 \times 100 = 30$$

$$(c) 0.3 \times 1000 = 300 \quad (d) 0.01 \times 10 = 0.1$$

$$(e) 10.05 \times 1000 = 10050$$

2. Find the product :

(a) $\overset{\textcircled{1}}{1} \cdot \overset{\textcircled{2}}{34}$ $\times 45$ <hr style="width: 100%;"/> $670$ $536 \times$ <hr style="width: 100%;"/> $60 \cdot 30$	(b) $\overset{\textcircled{1}}{3} \cdot 8$ $\times 52$ <hr style="width: 100%;"/> $76$ $190 \times$ <hr style="width: 100%;"/> $197 \cdot 6$	(c) $\overset{\textcircled{3}}{0} \cdot \overset{\textcircled{2}}{75}$ $\times 25$ <hr style="width: 100%;"/> $375$ $150 \times$ <hr style="width: 100%;"/> $18 \cdot 75$	(d) $3 \cdot 5$ $\times 9 \cdot 6$ <hr style="width: 100%;"/> $210$ $315 \times$ <hr style="width: 100%;"/> $33 \cdot 60$
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3. Find the product without multiplication :

- (a)  $8.7 \times 4.5$   
 No. of decimal places =  $1 + 1 = 2$   
 $87 \times 45 = 3915 = 39.15$
- (b)  $8.7 \times 45$   
 No. of decimal places =  $1 + 0 = 1$   
 $87 \times 45 = 3915 = 391.5$
- (c)  $87 \times 4.5$   
 No. of decimal places =  $0 + 1 = 1$   
 $87 \times 4.5 = 3915 = 391.5$
- (d)  $0.87 \times 4.5$   
 No. of decimal places =  $2 + 1 = 3$   
 $87 \times 45 = 3915 = 3.915$

4. Multiply :

- (a)  $0.2 \times 0.3 \times 0.5$   
 No. of decimals =  $1 + 1 + 1 = 3$   
 $2 \times 3 \times 5 = 30$   
 $0.2 \times 0.3 \times 0.5 = 0.030$
- (b)  $0.4 \times 0.05 \times 0.6$   
 No. of decimals =  $1 + 2 + 1 = 4$   
 $4 \times 5 \times 6 = 120$   
 $0.4 \times 0.05 \times 0.6 = 0.0120$
- (c)  $0.04 \times 0.5 \times 3$   
 No. of decimals =  $2 + 1 = 3$   
 $4 \times 5 \times 3 = 60$   
 $0.04 \times 0.5 \times 3 = 0.060$
- (d)  $0.7 \times 0.9 \times 0.01$   
 No. of decimals =  $1 + 1 + 2 = 4$   
 $7 \times 9 \times 1 = 63$   
 $0.7 \times 0.9 \times 0.01 = 0.0063$

### Exercise 7.6

1. Divide :

$$(a) \begin{array}{r} 11 \overline{) 44.44} \quad (4.04 \\ \underline{-44} \phantom{.44} \\ 044 \\ \underline{-44} \\ 0 \end{array}$$

$$(b) \begin{array}{r} 8 \overline{) 125.38} \quad (15.67 \\ \underline{-8} \phantom{.538} \\ 45 \phantom{.8} \\ \underline{-40} \phantom{.8} \\ 53 \\ \underline{-48} \phantom{.8} \\ 58 \\ \underline{-56} \\ 2 \end{array}$$

$$(c) \begin{array}{r} 15 \overline{) 90.9} \quad (.6 \\ \underline{-90} \phantom{.9} \\ 09 \end{array}$$

$$(d) \begin{array}{r} 13 \overline{) 13.52} \quad (1.04 \\ \underline{-13} \phantom{.52} \\ 052 \\ \underline{-52} \\ 0 \end{array}$$

$$(e) \begin{array}{r} 5 \overline{) 15.15} \quad (3.03 \\ \underline{-15} \phantom{.15} \\ 015 \\ \underline{-15} \\ 0 \end{array}$$

$$(f) \begin{array}{r} 85 \overline{) 527.34} \quad (6.2 \\ \underline{-510} \phantom{.34} \\ 173 \\ \underline{-170} \\ 34 \end{array}$$

$$(g) \begin{array}{r} 25 \overline{) 12.5} \quad (0.5 \\ \underline{-12} \phantom{.5} \\ 0 \end{array}$$

$$(h) \begin{array}{r} 14 \overline{) 100.8} \quad (0.72 \\ \underline{-98} \phantom{.8} \\ 28 \\ \underline{-28} \\ 0 \end{array}$$

2. Find the Quotient :

$$(a) 2.1 \div 10 = \frac{21}{100} = 0.21$$

$$(b) 25.34 \div 10 = \frac{2534}{1000} = 2.534$$

$$(c) 0.89 \div 10 = \frac{089}{1000} = 0.089$$

$$(d) 148.67 \div 100 = \frac{14867}{10000} = 1.4867$$

$$(e) 25.6 \div 1000 = \frac{256}{10000} = 0.0256$$

3. Divide :

$$(a) \begin{aligned} 3.15 \div 15 \\ 3.15 \times 10; & \quad 1.5 \times 10 \\ = 31.5; & \quad = 15 \end{aligned}$$

$$\begin{array}{r} 15 \overline{) 31.5} \quad (2.1 \\ \underline{-30} \phantom{.5} \\ 15 \\ \underline{-15} \\ 0 \end{array}$$

$$(b) \begin{aligned} 2.05 \div 2.5 \\ 2.05 \times 10; & \quad 2.5 \times 10 \\ = 20.5; & \quad = 25 \end{aligned}$$

$$\begin{array}{r} 25 \overline{) 20.5} \quad (0.8 \\ \underline{-20} \phantom{.5} \\ 5 \end{array}$$

(c)  $4.41 \div 2.1$   
 $4.41 \times 10 = 44.1$  ;  $2.1 \times 10 = 21$   
 $44.1 \div 21$

$$\begin{array}{r} 21 \overline{) 44.1} \quad (2.1 \\ - 42 \phantom{0} \\ \hline 21 \phantom{0} \\ - 21 \phantom{0} \\ \hline 0 \end{array}$$

(d)  $6.05 \div 2.5$   
 $6.05 \times 10 = 60.5$  ;  $2.5 \times 10 = 25$   
 $= 60.5 \div 25 = 2.42$

$$\begin{array}{r} 25 \overline{) 60.5} \quad (2.42 \\ - 50 \phantom{0} \\ \hline 105 \phantom{0} \\ - 100 \phantom{0} \\ \hline 50 \phantom{0} \\ - 50 \phantom{0} \\ \hline 0 \end{array}$$

(e)  $5.85 \div 1.5$   
 $5.85 \times 10 = 58.5$  ;  $1.5 \times 10 = 15$

$$\begin{array}{r} 15 \overline{) 58.5} \quad (3.9 \\ - 45 \phantom{0} \\ \hline 135 \phantom{0} \\ - 135 \phantom{0} \\ \hline 0 \end{array}$$

### Exercise 7.7

1. Total cloth needed to make 1 dress = 1.75 m  
 No. of dresses made out of = 7 m  
 $7 \times 100 = 700$  ;  $1.75 \times 100 = 175$   
 Thus, 4 dresses can be made out of 7m cloth.

$$\begin{array}{r} 175 \overline{) 700} \quad (4 \\ - 700 \\ \hline 0 \end{array}$$

2. Weight of 1 ring = 5.016 gm  
 Weight of 10 such rings =  $5.016 \times 10 = 50.160$  gm  
 Thus, weight of 10 such rings will be 50.160 gm

$$\begin{array}{r} 5 \cdot 016 \\ \times 10 \\ \hline 0000 \\ 5016 \times \\ \hline 50 \cdot 160 \end{array}$$

3. Cost of 1m ribbon = ₹4.28  
 Cost of 5.6m ribbon =  $5.6 \times 4.28$

$$\begin{array}{r} \textcircled{4} \\ 4 \cdot 28 \\ \times 5 \cdot 6 \\ \hline 2568 \\ 2140 \times \\ \hline 23 \cdot 968 \end{array}$$

4. Oil contained in 19 tins = 313.5 L  
 Oil contained in 1 tin =  $313.5 \div 19$   
 = 16.5 L

$$\begin{array}{r} 19 \overline{) 313.5} \quad (16.5 \\ - 19 \phantom{0} \downarrow \\ \hline 123 \phantom{0} \downarrow \\ - 114 \phantom{0} \downarrow \\ \hline 95 \phantom{0} \\ - 95 \phantom{0} \\ \hline 0 \end{array}$$

5. Total milk with milkman = 24.51 L ① ⑬ ⑭ ⑩  
 Milk sold by milkman = 19.750 L ~~24.51~~  
 Milk left with a milkman = 24.51 L - 19.750 L = 4.750  $\begin{array}{r} - 19.750 \\ \hline 4.760 \end{array}$   
 Thus, 4.760 of milk is left with milkman.  
 i.e., 4.760
6. Anant traveled by bus = 26.3 km ①  
 Anant traveled by ricksha = 6.320 km 26.300  
 Anant traveled by foot = 0.35 km 6.320  
 Total distance traveled by Anant = (26.3 + 6.320 + 0.35)  $\begin{array}{r} + 0.350 \\ \hline 32.970 \end{array}$   
 = 32.970 km
- Anant traveled 32.970 km.

## Chapter-8 (Simplification of Numerical Expressions)

### Exercise 8.1

1. Simplify :

- (a)  $18 \div 3 \times (6 - 3) + 2 \times 9 \div (4 + 2)$   
 $= 18 \div 3 \times 3 + 2 \times 9 \div 6$   
 $= \frac{18}{3} \times 3 + 2 \times \frac{9}{6} = \frac{6}{1} \times 3 + 2 \times \frac{3}{2} = 18 + 3 = 21$
- (b)  $(6 + 8) - (44 - 16) \div 2$   
 $= 14 - 28 \div 2 = 14 - \frac{28}{2} = 14 - 14 = 0$
- (c)  $11 + 3 \times 2 - 4 \div 2$   
 $= 11 + 3 \times 2 - 2 = 11 + 6 - 2 = 17 - 2 = 15$
- (d)  $10 + 5 \times 100 \div 25 - 5 \times 3$   
 $= 10 + 5 \times 4 - 5 \times 3 = 10 + 20 - 15 = 30 - 15 = 15$
- (e)  $8 + 9 \div 3 + 9 \div 9$   
 $= 8 + 3 + 1 = 12$
- (f)  $18 - (9 \times 3 + 6) \div 11$   
 $= 18 - (27 + 6) \div 11 = 18 - 33 \div 11 = 18 - 3 = 15$
- (g)  $5 \times 1335 \div 267 + 5$   
 $= 5 \times 5 + 5 = 25 + 5 = 30$
- (h)  $(0.2 + 0.7) \times 6 - 2$   
 $= 0.9 \times 6 - 2 = 5.4 - 2 = 3.4$
- (i)  $3 \times [2 + \{4.21 - (5.35 - 2.18)\}]$   
 $= 3 \times [2 + \{4.21 - 3.17\}] = 3 \times [2 + 1.04] = 3 \times 3.04 = 9.12$
- (j)  $26 + \{(6 \div 2 - 1) + 4\} \div 3 \times 2 - 3 \times 5$   
 $= 26 + \{2 + 4\} \div 3 \times 2 - 3 \times 5$   
 $= 26 + 2 \times 2 - 3 \times 5 = 26 + 4 - 15 = 30 - 15 = 15$

- (k)  $[\{2.1 + (3 \times 15 \times 2)\} + 20]$   
 $= [\{2.1 + 90\} + 20] = 92.1 + 20 = 112.10$
- (l)  $7420 \div 2 \times 181 \times 4 - 20$   
 $= 3710 \times 181 \times 4 - 20 = 3710 \times 724 - 20 = 2686040 - 20 = 2686020$
- (m)  $[\{2.1 + (2 \times 15)\} \times 4] + 30$   
 $= [\{2.1 + 30\} \times 4] + 30 = [32.1 \times 4] + 30 = 128.4 + 30 = 158.40$
- (n)  $3 \times [2 + \{4.31 - (5.63 - 2.12)\}]$   
 $= 3 \times [2 + \{4.31 - 3.51\}] = 3 \times [2 + 0.8] = 3 \times 2.8 = 8.4$

2. Simplify :

- (a)  $2\frac{3}{4} \times \frac{2}{3} - \frac{1}{5} + \frac{2}{5} \div 3$  of  $\frac{1}{5}$   
 $= \frac{11}{4} \times \frac{2}{3} - \frac{1}{5} + \frac{2}{5} \times \frac{1}{3} \times 5 = \frac{11}{6} - \frac{1}{5} + \frac{2}{3} = \frac{55 - 6 + 20}{30} = \frac{75 - 6}{30} = \frac{69}{30} = \frac{23}{10}$
- (b)  $\left[\frac{3}{5} + \frac{2}{3} \times \frac{1}{2}\right] - \frac{1}{3} \div \frac{3}{2}$   
 $= \left[\frac{3}{5} + \frac{2}{6}\right] - \frac{1}{3} \div \frac{3}{2} = \left[\frac{18 + 10}{30}\right] - \frac{1}{3} \div \frac{3}{2}$   
 $= \left[\frac{28}{30}\right] - \frac{1}{3} \div \frac{3}{2} = \frac{28}{30} - \frac{1}{3} \times \frac{2}{3} = \frac{28}{30} - \frac{2}{9} = \frac{84 - 20}{90} = \frac{64}{90} = \frac{32}{45}$
- (c)  $\frac{1}{6} + \frac{2}{3} - \frac{1}{3} \times \frac{2}{3}$  of 3  
 $= \frac{1}{6} + \frac{2}{3} - \frac{1}{3} \times \frac{2}{3} \times 3 = \frac{1}{6} + \frac{2}{3} - \frac{2}{3} = \frac{1 + 4}{6} - \frac{2}{3}$   
 $= \frac{5}{6} - \frac{2}{3} = \frac{5 - 4}{6} = \frac{1}{6}$
- (d)  $\left[\frac{15}{4} - \left(\frac{3}{2} \times \frac{3}{4}\right)\right] \div 4 - \frac{1}{2}$   
 $= \left[\frac{15}{4} - \frac{9}{8}\right] \div 4 - \frac{1}{2} = \left[\frac{30 - 9}{8}\right] \div 4 - \frac{1}{2} = \left[\frac{21}{8}\right] \div 4 - \frac{1}{2}$   
 $= \frac{21}{8} \times \frac{1}{4} - \frac{1}{2} = \frac{21}{32} - \frac{1}{2} = \frac{21 - 16}{32} = \frac{5}{32}$
- (e)  $\left[\frac{16}{4} - \left(\frac{3}{2} \times \frac{4}{3}\right)\right] \div 4 - \frac{1}{2}$   
 $= \left[\frac{16}{4} - \left(\frac{3}{2} \times \frac{4}{3}\right)\right] \div 4 - \frac{1}{2} = \left[\frac{16}{4} - 2\right] \div 4 - \frac{1}{2}$   
 $= \left[\frac{16 - 8}{4}\right] \div 4 - \frac{1}{2} = \left[\frac{8}{4}\right] \div 4 - \frac{1}{2} = 2 \div 4 - \frac{1}{2} = \frac{2^1}{4_2} - \frac{1}{2} = \frac{1}{2} - \frac{1}{2} = 0$

$$\begin{aligned}
 \text{(f)} \quad & \left\{ \frac{3}{4} + \left( \frac{5}{6} \div \frac{2}{3} - \frac{1}{3} \right) \right\} \times 5 - \frac{1}{4} \\
 &= \left\{ \frac{3}{4} + \left( \frac{5}{6} \times \frac{3}{2} - \frac{1}{3} \right) \right\} \times 5 - \frac{1}{4} = \left\{ \frac{3}{4} + \left( \frac{5}{4} - \frac{1}{3} \right) \right\} \times 5 - \frac{1}{4} \\
 &= \left\{ \frac{3}{4} + \left( \frac{15-4}{12} \right) \right\} \times 5 - \frac{1}{4} = \left\{ \frac{3}{4} + \frac{11}{12} \right\} \times 5 - \frac{1}{4} = \left\{ \frac{9+11}{12} \right\} \times 5 - \frac{1}{4} \\
 &= \left\{ \frac{20}{12} \right\} \times 5 - \frac{1}{4} = \frac{20}{12} \times 5 - \frac{1}{4} = \frac{100}{12} - \frac{1}{4} = \frac{100-3}{12} = \frac{97}{12}
 \end{aligned}$$

$$\begin{aligned}
 \text{(g)} \quad & 5 - \left[ \frac{2}{3} + \left\{ \frac{5}{3} - \left( \frac{4}{7} - \frac{1}{3} \right) \right\} \right] \\
 &= 5 - \left[ \frac{2}{3} + \left\{ \frac{5}{3} - \left( \frac{12-7}{21} \right) \right\} \right] = 5 - \left[ \frac{2}{3} + \left\{ \frac{5}{3} - \frac{5}{21} \right\} \right] \\
 &= 5 - \left[ \frac{2}{3} + \left\{ \frac{35-5}{21} \right\} \right] = 5 - \left[ \frac{2}{3} + \left\{ \frac{30}{21} \right\} \right] = 5 - \left[ \frac{2}{3} + \frac{30}{21} \right] \\
 &= 5 - \left[ \frac{14+30}{21} \right] = 5 - \left[ \frac{44}{21} \right] = \frac{105-44}{21} = \frac{61}{21}
 \end{aligned}$$

$$\begin{aligned}
 \text{(h)} \quad & 4 - \left[ \frac{2}{5} + \left\{ 3 \frac{1}{3} - \left( \frac{4}{7} + \frac{1}{3} \right) \right\} \right] \\
 &= 4 - \left[ \frac{2}{5} + \left\{ \frac{10}{3} - \left( \frac{12+7}{21} \right) \right\} \right] = 4 - \left[ \frac{2}{5} + \left\{ \frac{10}{3} - \frac{19}{21} \right\} \right] \\
 &= 4 - \left[ \frac{2}{5} + \frac{51}{21} \right] = 4 - \left[ \frac{42+255}{105} \right] = 4 - \frac{297}{105} = \frac{420-297}{105} = \frac{123}{105} = \frac{41}{35}
 \end{aligned}$$

$$\begin{aligned}
 \text{(i)} \quad & 3 - \left[ \left\{ 1 + \frac{2}{5} + \left( \frac{2}{7} + \frac{1}{3} \right) \right\} \right] \\
 &= 3 - \left[ \left\{ 1 + \frac{2}{5} + \left( \frac{6+7}{21} \right) \right\} \right] = 3 - \left[ \left\{ 1 + \frac{2}{5} + \frac{13}{21} \right\} \right] \\
 &= 3 - \left[ \left\{ \frac{105+42+65}{105} \right\} \right] = 3 - \frac{212}{105} = \frac{315-212}{105} = \frac{103}{105}
 \end{aligned}$$

$$\begin{aligned}
 \text{(j)} \quad & 6\frac{1}{3} - \left[ 2\frac{1}{5} \div \left\{ \frac{2}{5} - \frac{1}{3} \times \left( \frac{1}{4} - \frac{1}{7} \right) \right\} \right] \\
 &= \frac{19}{3} - \left[ \frac{11}{5} \div \left\{ \frac{2}{5} - \frac{1}{3} \times \left( \frac{7-4}{28} \right) \right\} \right] = \frac{19}{3} - \left[ \frac{11}{5} \div \left\{ \frac{2}{5} - \frac{1}{3} \times \frac{3}{28} \right\} \right] \\
 &= \frac{19}{3} - \left[ \frac{11}{5} \div \left\{ \frac{2}{5} - \frac{1}{28} \right\} \right] = \frac{19}{3} - \left[ \frac{11}{5} \div \left\{ \frac{56-5}{140} \right\} \right] \\
 &= \frac{19}{3} - \left[ \frac{11}{5} \div \frac{51}{140} \right] = \frac{19}{3} - \left[ \frac{11}{5} \times \frac{140}{51} \right] = \frac{19}{3} - \left[ 11 \times \frac{28}{51} \right] = \frac{19}{3} - \frac{308}{51} \\
 &= \frac{323-308}{51} = \frac{15}{51} = \frac{5}{17}
 \end{aligned}$$

$$\begin{aligned}
 \text{(k)} \quad & 2\frac{1}{5} - \left[ \left\{ \frac{7}{4} - \left( 2\frac{1}{3} - 1\frac{1}{5} \right) \right\} \right] \\
 &= \frac{11}{5} - \left[ \left\{ \frac{7}{4} - \left( \frac{7}{3} - \frac{6}{5} \right) \right\} \right] = \frac{11}{5} - \left[ \left\{ \frac{7}{4} - \left( \frac{35-18}{15} \right) \right\} \right] \\
 &= \frac{11}{5} - \left[ \left\{ \frac{7}{4} - \frac{17}{15} \right\} \right] = \frac{11}{5} - \left[ \left\{ \frac{105-68}{60} \right\} \right] = \frac{11}{5} - \left[ \frac{37}{60} \right] \\
 &= \frac{11}{5} - \frac{37}{60} = \frac{132-37}{60} = \frac{95}{60} = \frac{19}{12}
 \end{aligned}$$

$$\begin{aligned}
 \text{(l)} \quad & 9\frac{2}{7} - \left[ 1\frac{2}{7} + \left\{ 2\frac{5}{3} - \left( 1\frac{1}{7} - \frac{1}{9} \right) \right\} \right] \\
 &= \frac{65}{7} - \left[ \frac{9}{7} + \left\{ \frac{11}{3} - \left( \frac{8}{7} - \frac{1}{9} \right) \right\} \right] = \frac{65}{7} - \left[ \frac{9}{7} + \left\{ \frac{11}{3} - \left( \frac{72-7}{63} \right) \right\} \right] \\
 &= \frac{65}{7} - \left[ \frac{9}{7} + \left\{ \frac{11}{3} - \frac{65}{63} \right\} \right] = \frac{65}{7} - \left[ \frac{9}{7} + \left\{ \frac{231-65}{63} \right\} \right] \\
 &= \frac{65}{7} - \left[ \frac{9}{7} + \frac{166}{63} \right] = \frac{65}{7} - \left[ \frac{81+166}{63} \right] = \frac{65}{7} - \frac{247}{63} = \frac{358}{63}
 \end{aligned}$$

## Chapter-9 (Measurement of Length, Mass and Capacity)

### Exercise 9.1

- Write the given weight in kg :  
 (a) 2305 g = 2.305 kg    (b) 9015 g = 9.015 kg    (c) 350 g = 0.350 kg
- Write the given weight in g :  
 (a) 0.256 kg = 256 g    (b) 2.5 kg = 2500 g    (c) 9.28 kg = 9280 g
- Write the given quantity in L :  
 (a) 2 L 150 mL = 2.150 L    (b) 8 L 20 mL = 8.20 mL  
 (c) 7505 mL = 7.505 mL

4. Write the given quantity in mL :
- (a) 2.152 L = 2152 mL                      (b) 8.506 L = 8506 mL  
(c) 1 L 50 mL = 1050 mL
5. Weight of a baby elephant = 90 kg  
1 kg = 1000 g  
90 kg =  $90 \times 1000 = 90000$  g  
Weight of a baby elephant in gram = 90,000
6. Weight of cake in g = 4290  
Weight of cake in kg =  $\frac{4290}{1000} = 4.290$  kg
7. Thickness of three books = 24m, 12m, 4m  
Thickness of total pile = 40m
8. Onions bought by Ramesh = 60 kg  
Onions left with Ramesh = 32.194 kg  
Total onions sold =  $(60 - 32.194)$  kg = 27.806 kg
9. Weight of a carton = 8.452 kg                       $\begin{matrix} \textcircled{3} & \textcircled{4} & \textcircled{1} \\ 8 & \cdot & 4 & 5 & 2 \\ & & \times & 8 & \\ \hline 6 & 7 & \cdot & 6 & 1 & 6 \end{matrix}$   
Weight of 8 cartons =  $8 \times 8.452 = 67.616$   
 $\therefore$  Weight of 8 cartons = 67.616 kg
10. Apple juice in jug = 2 L 150 mL  
 $2 \times 1000 + 150$  mL  
2000 + 150 L  
2150 mL  
Divide among 12 students =  $\frac{2150}{12}$  mL = 179.17 mL

### Exercise 9.2

Fill in the blanks :

- (a) 2490 m = 24.9 hm                      (b) 46 hm = 4.6 dam                      (c) 5490 m = 5.49 km  
(d) 16.2 dm = 162000 mm                      (e) 12.8 dam = 128 m                      (f) 9 cm = 90 mm  
(g) 9 km = 9000 m                      (h) 800 dam = 8 km                      (i) 2.9 m = 290 cm  
(j) 11000 cm = 11 dam                      (k) 13.6 km = 13600 m                      (l) 50 mm = 5 cm  
(m) 2954 m = 2.954 km                      (n) 84 hm = 8.4 km

### Exercise 9.3

Fill in the blanks :

- (a) 231.52 kg = 231520 g                      (b) 0.503 kg = 503 g                      (c) 32 kg = 3200 dag  
(d) 76 kg = 0.076 g                      (e) 1260 kg = 1.260 dag                      (f) 8.213 g = 8213 mg  
(g) 13.9 dg = 139 cg                      (h) 400 dg = 4 dag                      (i) 32 mg = 3.2 cg  
(j) 9 hg = 9000 dg                      (k) 316.9 g = 0.3169 kg                      (l) 19.3 dg = 193 cg  
(m) 1200 mg = 1.2 g                      (n) 3590 g = 3.59 kg                      (o) 320 g = 3.2 g  
(p) 84 kg = 84000 g

### Exercise 9.4

Fill in the blanks :

- (a)  $5\text{L} = \underline{5000}\text{ mL}$       (b)  $236.19\text{L} = \underline{236190}\text{ mL}$       (c)  $12\text{ kL} = \underline{1200}\text{ daL}$   
(d)  $0.503\text{ L} = \underline{503}\text{ mL}$       (e)  $3.623\text{ kL} = \underline{3623}\text{ L}$       (f)  $300\text{ daL} = \underline{3}\text{ kL}$   
(g)  $3.5\text{ L} = \underline{35}\text{ dL}$       (h)  $5.675\text{ hL} = \underline{5675}\text{ dL}$       (i)  $120\text{ dL} = \underline{1.2}\text{ daL}$   
(j)  $18.3\text{ dL} = \underline{1830}\text{ mL}$       (k)  $12\text{ hL} = \underline{12000}\text{ dL}$       (l)  $1400\text{ dL} = \underline{1.4}\text{ hL}$   
(m)  $18.3\text{ cL} = \underline{1.83}\text{ dL}$       (n)  $1180\text{ mL} = \underline{1.18}\text{ L}$       (o)  $1565\text{ L} = \underline{1.565}\text{ kL}$   
(p)  $10\text{ dL} = \underline{1}\text{ L}$

### Exercise 9.6

Tick (✓) the correct answer :

1. (b)    2. (c)    3. (a)    4. (b)    5. (d)

## Chapter-10 (Measurement of Temperature)

### Exercise 10.1

1. Change the Celsius scale :

(a)  $176^\circ\text{F}$

$$^\circ\text{F} = \frac{9}{5}^\circ\text{C} + 32$$

$$(\text{F} - 32) \times \frac{5}{9} = \text{C}$$

$$176^\circ\text{F} = (176 - 32) \times \frac{5}{9}$$

$$144 \times \frac{5}{9} = 80^\circ\text{C}$$

(c)  $41^\circ\text{F}$

$$(\text{F} - 32) \times \frac{5}{9} = \text{C}$$

$$(41 - 32) \times \frac{5}{9}$$

$$9 \times \frac{5}{9} = 5^\circ\text{C}$$

(b)  $104^\circ\text{F}$

$$(\text{F} - 32) \times \frac{5}{9} = \text{C}$$

$$104^\circ\text{C} = (104 - 32) \times \frac{5}{9}$$

$$72 \times \frac{5}{9} = \frac{360}{9} = 40^\circ\text{C}$$

(d)  $95^\circ\text{F}$

$$(\text{F} - 32) \times \frac{5}{9} = \text{C}$$

$$(95 - 32) \times \frac{5}{9}$$

$$63 \times \frac{5}{9} = 35^\circ\text{C}$$

2. Change to Fahrenheit scale :

(a)  $25^\circ\text{C}$

$$^\circ\text{F} = \frac{9}{5}^\circ\text{C} + 32$$

$$25^\circ\text{C} = \left(\frac{9}{5} \times 25\right) + 32$$

$$45 + 32 = 77^\circ\text{F}$$

(b)  $42^\circ\text{C}$

$$^\circ\text{F} = \frac{9}{5}^\circ\text{C} + 32$$

$$42^\circ\text{C} = \left(\frac{9}{5} \times 42\right) + 32$$

$$75.6 + 32 = 107.6^\circ\text{F}$$

(c)  $15^{\circ}\text{C}$

$$^{\circ}\text{F} = \frac{9}{5}^{\circ}\text{C} + 32$$

$$= \left(\frac{9}{5} \times 15\right) + 32$$

$$27 + 32 = 59^{\circ}\text{F}$$

(d)  $90^{\circ}\text{C}$

$$^{\circ}\text{F} = \frac{9}{5}^{\circ}\text{C} + 32$$

$$\left(\frac{9}{5} \times 90\right) + 32$$

$$162 + 32 = 194^{\circ}\text{F}$$

3. Answer the following :

- What is the normal temperature of human being?  $98.6^{\circ}\text{F}$
- In how many parts the Fahrenheit scale was divided? – 180
- Which scale is an international standard measurement of temperature? – thermometer
- Name the metal present in thermometer – mercury
- At what temperature human being cannot be survived? – below  $94^{\circ}\text{F}$  and above  $108^{\circ}\text{F}$
- What is sufficient range to measure human body temperature? =  $94^{\circ}\text{F}$  to  $108^{\circ}\text{F}$  or  $35^{\circ}\text{C}$  to  $42^{\circ}\text{C}$

### Exercise 10.2

Tick (✓) the correct answer :

1. (b) 2. (c) 3. (a) 4. (c) 5. (a) 6. (d) 7. (c) 8. (a)

## Chapter-11 (Average)

### Exercise 11.1

- Average height of 4 boys =  $\frac{168 + 165 + 174 + 159}{4} = \frac{666}{4} = 166.5$  cm.
- Average length of a ribbon =  $\frac{36 + 40 + 32 + 38 + 34}{5} = \frac{180}{5} = 36$  cm.
- Average weight of apples =  $\frac{220 + 218 + 244 + 255 + 206 + 237}{6}$   
 $= \frac{1380}{6} = 230$  g
- Average monthly rainfall for 5 months =  $\frac{28 + 5.5 + 5.8 + 4.4 + 12.5}{5} = \frac{31}{5} = 6.2$
- Average marks of Robin =  $\frac{80 + 70 + 60 + 80 + 70}{5} = \frac{360}{5} = 72$
- Average age of peons =  $\frac{36 + 39 + 28 + 32 + 45}{5} = \frac{180}{5} = 36$  yrs
- Average income of Shamu = ₹  $\frac{(110 + 90 + 80 + 100 + 115 + 95 + 89)}{7}$   
 $= \frac{679}{7} = 97$

8. Average toffees in each boys pocket =  $\frac{18 + 22 + 17}{3} = \frac{57}{3} = 19$  toffees
9. (a) The highest maximum temperature was recorded on Thursday.  
 (b) The lowest maximum temperature was recorded on Friday.  
 (c) Temperature is higher on Sunday.  
 (d) Avg. maximum temperature =  $\frac{(32.4 + 33.1 + 35.3 + 35.6 + 28.8 + 29.3 + 29.5)}{7} = \frac{224}{7} = 32$
10. Abhijeet average score =  $\frac{89 + 69 + 63 + 61 + 78}{5} = \frac{360}{5} = 72$

### Exercise 11.2

1. (a) Average run made by the four batsmen in the 1st innings of the 2nd match  
 =  $\frac{27 + 87 + 8 + 22}{4} = \frac{144}{4} = 36$  runs
- (b) Average of batsman A =  $\frac{73 + 107 + 27 + 26 + 30 + 31}{6} = \frac{294}{6} = 49$   
 Average of batsman B =  $\frac{0 + 41 + 87 + 54 + 122 + 78}{5} = \frac{382}{6} = 63.6$   
 Average of batsman C =  $\frac{40 + 29 + 8 + 13 + 38 + 4}{6} = \frac{132}{6} = 22$   
 Average of batsman D =  $\frac{15 + 63 + 22 + 39 + 0 + 47}{5} = \frac{186}{5} = 37.2$
2. Average marks scored by Shiwani =  $\frac{87 + 68 + 65 + 88 + 69}{5} = \frac{377}{5} = 75.4$   
 Average marks scored by Muskan =  $\frac{78 + 68 + 80 + 74 + 63}{5} = \frac{363}{5} = 72.6$   
 Average marks scored by Ayushi =  $\frac{84 + 70 + 63 + 86 + 63}{5} = 73.2$   
 Average marks scored by Vinita =  $\frac{90 + 71 + 75 + 79 + 69}{5} = 76.8$   
 Avg. marks scored by Ashmit =  $\frac{93 + 73 + 67 + 71 + 71}{5} = \frac{375}{5} = 75$
3. Avg. consumption of milk in family A =  $\frac{14 + 25 + 16 + 15}{4} = \frac{57.5}{4} = 14.37$   
 Avg. consumption of milk in family B =  $\frac{20 + 12 + 14 + 13}{4} = \frac{59}{4} = 14.75$   
 Avg. consumption of milk in family C =  $\frac{13 + 15 + 12 + 14}{4} = \frac{54}{4} = 13.5$   
 Family C uses the least quantity of milk.

4. Average attendance of students in that week =  $\frac{41 + 38 + 40 + 42 + 39 + 40}{6}$   
 $= \frac{240}{6} = 40$

## Chapter-12 (Percentage)

### Exercise 12.1

1. Fill in the blanks :

(a)  $\frac{0.05}{100} \times 100 = 5\%$

(b)  $\frac{89}{1000} \times 100 = 8.9\%$

(c)  $\frac{99}{1000} \times 100 = 9.9\%$

(d)  $\frac{60}{100} \times 100 = 60\%$

(e)  $\frac{690}{1000} \times 100 = 69.0\%$

(f)  $\frac{125}{1000} \times 100 = 12.5\%$

(g)  $\frac{48}{60} \times 100 = 80\%$

(h)  $\frac{5}{10} \times 100 = 50\%$

(i)  $\frac{40}{100} \times 100 = 40\%$

(j)  $\frac{410}{1000} \times 100 = 41\%$

(k)  $\frac{146}{365} \times 100 = 40\%$

(l)  $\frac{35}{1000} \times 100 = 3.5\%$

2. Convert the following fractions into percentage :

(a)  $\frac{3}{20} = \frac{3}{20} \times 100\% = 15\%$

(b)  $\frac{17}{50} = \frac{17}{50} \times 100\% = 34\%$

(c)  $\frac{7}{8} = \frac{7}{8} \times 100\% = 87.5\%$

(d)  $\frac{19}{20} = \frac{19}{20} \times 100\% = 95\%$

(e)  $\frac{3}{10} = \frac{3}{10} \times 100\% = 30\%$

(f)  $\frac{7}{7} = \frac{7}{7} \times 100\% = 100\%$

(g)  $\frac{26}{200} = \frac{26}{200} \times 100\% = 13\%$

(h)  $\frac{31}{25} = \frac{31}{25} \times 100\% = 124\%$

(i)  $0.123 = \frac{0.123}{1000} \times 100\% = 12.3\%$

(j)  $0.105 = \frac{0.105}{1000} \times 100\% = \frac{105}{1000} \times 100\% = 10.5\%$

(k)  $0.645 = \frac{0.645}{1000} \times 100\% = 64.5\%$

(l)  $0.36 = \frac{0.36}{100} \times 100\% = 36\%$

(m)  $0.032 = \frac{0.032}{1000} \times 100\% = 3.2\%$

(n)  $0.004 = \frac{4}{1000} \times 100\% = 0.4\%$

(o)  $0.024 = \frac{24}{1000} \times 100\% = 2.4\%$

3. Convert the following percentages into common fractions :

(a)  $33\% = \frac{33}{100}$

(b)  $25\% = \frac{25}{100} = \frac{1}{4}$

(c)  $24\% = \frac{24}{100} = \frac{6}{25}$

(d)  $55\% = \frac{55}{100} = \frac{11}{20}$

(e)  $75\% = \frac{75}{100} = \frac{3}{4}$

(f)  $11\frac{1}{9}\% = \frac{100}{9} \div 100 = \frac{100}{9} \times \frac{1}{100} = \frac{1}{9}$

(g)  $66\frac{2}{3}\% = \frac{200}{3} \div 100 = \frac{200}{3} \times \frac{1}{100} = \frac{2}{3}$

(h)  $12\frac{1}{2}\% = \frac{25}{2} = \frac{25}{2} \div 100 = \frac{25}{2} \times \frac{1}{100} = \frac{1}{8}$

(i)  $33\frac{1}{3}\% = \frac{100}{3} \times \frac{1}{100} = \frac{1}{3}$

(j)  $6\frac{1}{4}\% = \frac{25}{4} \times \frac{1}{100} = \frac{1}{16}$

(k)  $140\% = \frac{140}{100} = \frac{7}{5}$

(l)  $72\% = \frac{72}{100} = \frac{18}{25}$

(m)  $80\% = \frac{80}{100} = \frac{4}{5}$

(n)  $44\% = \frac{44}{100} = \frac{11}{25}$

(o)  $12\% = \frac{12}{100} = \frac{3}{25}$

4. Convert the following percentage into decimal fractions :

(a)  $18\% = \frac{18}{100} = 0.18$

(b)  $84\% = \frac{84}{100} = 0.84$

(c)  $0.1\% = \frac{0.1}{100} = 0.001$

(d)  $101\% = \frac{101}{100} = 1.01$

(e)  $150\% = \frac{150}{100} = 1.5$

(f)  $1.5\% = \frac{1.5}{100} = 0.015$

(g)  $0.15\% = \frac{0.15}{100} = 0.0015$

(h)  $0.3\% = \frac{0.3}{100} = 0.003$

(i)  $43.2\% = \frac{43.2}{100} = 0.432$

(j)  $1500\% = \frac{1500}{100} = 15$

(k)  $80\% = \frac{80}{100} = 0.8$

(l)  $95\% = \frac{95}{100} = 0.95$

5. Write 'T' for True and 'F' for False :

(a) False (b) False (c) False (d) True (e) True (f) False (g) True (h) True

6. Find the value of :

(a) 90% of 270  
 $\frac{90}{100} \times 270 = 243$

(b) 75% of 300  
 $\frac{75}{100} \times 300 = 225$

(c) 50% of ₹1  
 $\frac{50}{100} \times 100 = 0.5$

(d) 20% of 1 L  
 $\frac{20}{100} \times 1000 = 200 \text{ mL}$

(e) 15 % of 100  
 $\frac{15}{100} \times 100 = 15$  cm

(f) 16 % of 200  
 $\frac{16}{100} \times 200 = 32$

(g) 12.5 of 1 kg  
 $\frac{125}{1000} \times 1000 = 125$  g

(h) 15 % of 150  
 $\frac{15}{100} \times 150 = \frac{225}{10} = 22.5$

(i) 10 % of 350  
 $\frac{10}{100} \times 350 = 35$  %

(j) 12.5 % of 320 mL  
 $\frac{125}{1000} \times 320 = 40$

### Exercise 12.2

1. Earnings of Rohit's father = ₹ 550

Earnings of Javed's father = 30 % more of 550

$$\frac{30}{100} \times 550 = 165 = 550 + 165 = ₹ 715$$

2. Price of sweater = ₹ 350      Price of shirt = 80 % of ₹ 350

$$\frac{80}{100} \times 350 = ₹ 280$$

3. Salary of Fatima = ₹ 25,000 per month      Salary of Shweta = 90 % of ₹ 25000

$$\frac{90}{100} \times 25000 = ₹ 22,500$$

$$25000 - 22500 = ₹ 2500$$

Difference = ₹ 2500

4. Points scored by Aashi = 80      Points scored by David = 80 % of 80

Points scored by Tina = 50 % of David

$$\text{David score} = \frac{80}{100} \times 80 = 64 \quad \text{Tina score} = \frac{50}{100} \times 64 = 32$$

5. Earning of Mrs. Shukla = ₹ 36000

Earning spend on food and lodging = 75 % of ₹ 36000

Earning spend on educational education = 25 % of ₹ 36000

$$\frac{75}{100} \times 36000 = ₹ 27000 \quad 25 \% \text{ of } ₹ 36000 \quad \frac{25}{100} \times ₹ 36000 = ₹ 9000$$

Mrs. shukla spend ₹ 9000 on her children's educations.

7. Let the monthly income be x

Income spend on food = 35 % of x      Income spend on rent = 15 % of x

Income spend of education = 10 % of x      Income spend on clothes = 10 % of x

Saving = 1500

$$\begin{aligned} \text{Monthly Income} &= \frac{35x}{100} + \frac{15x}{100} + \frac{10x}{100} + \frac{10x}{100} + 1500 = x \\ &= \frac{35x + 15x + 10x + 10x + 1500x}{100} \end{aligned}$$

$$\begin{aligned}
 &= \frac{70x}{100} = x - 1500 \\
 &= 1500 = \frac{100x - 70x}{100} \\
 &= 150000 = 30x \\
 &= x = ₹ 5000
 \end{aligned}$$

8. Cost of the lower rear stalls = ₹ 24  
 Cost of the tickets in balcony = 25 % of ₹ 24 + 24  
 $= \frac{25}{100} \times 24 = 6 = 24 + 6 = ₹ 30$

9. Cost of the flat purchased = ₹ 1,25,000  
 Money paid in cash = 40 % of ₹ 1,25,000  
 $= \frac{40}{100} \times ₹ 125000 = ₹ 50,000$

And he paid in 5 equal installments =  $\frac{50,000}{5} = ₹ 10,000$

10. Kids going to Delhi = 500

On arrival of 40 % kids bus will start = 40 % of 500 =  $\frac{40}{100} \times 500 = 200$

Kid arrived = 180

How many kids more have to arrive?

20 kids more have to arrive.

11. Series of small bulbs = 200

No. of blue bulbs = 45 % of 200 =  $\frac{45}{100} \times 200 = 90$

No. of yellow bulbs = 55 % of 200 =  $\frac{55}{100} \times 200 = 110$

12. Let his salary is x salary spend on Rat = 30%

Salary spend on clothes = 10%

Salary spend on education = 13%

Salary spend on food = 20%

Saving = ₹ 1350/month

Monthly salary

$$= \frac{30x}{100} + \frac{10x}{100} + \frac{13x}{100} + \frac{20x}{100} + 1350$$

$$= \frac{73x}{100} + 1350 = x = 73x + 135000 = 1000x$$

$$100x - 73x = 135000$$

$$27x = 135000$$

$$x = ₹ 5000$$

## Chapter-13 (Profit and Loss)

### Exercise 13.1

1. Fill in the blanks :

(a) C.P. = ₹420, S.P. = ₹615

$$\text{Profit} = \text{S.P.} - \text{C.P.}$$

$$= 615 - 420 = ₹195$$

(c) C.P. = ₹6348, S.P. = ₹6000

$$\text{Loss} = 6348 - 6000 = ₹348$$

(b) C.P. = ₹120, S.P. = ₹65

$$\text{Loss} = 120 - 65 = ₹55$$

(d) C.P. = ₹7350, S.P. = ₹8000

$$\text{Profit} = 8000 - 7350 = ₹600$$

2. Find the profit and loss in the following cases :

(a) C.P. = ₹81

$$\text{Overhead} = ₹9$$

$$\text{S.P.} = ₹100$$

$$\text{C.P.} = 81 + 9 \text{ C.P.} = ₹90$$

$$\text{S.P.} = 100$$

$$\text{Profit} = 100 - 90 = ₹10$$

(b) C.P. = ₹77 +

$$\text{Overheads} = 77 + 8 = ₹85$$

$$\text{S.P.} = ₹80$$

$$\text{Loss} = 85 - 80 = ₹5$$

(c) C.P. = ₹18

$$\text{S.P.} = ₹15$$

$$\text{C.P.} > \text{S.P.}$$

$$\text{Loss} = 18 - 15 = 3$$

(d) C.P. = ₹20.25

$$\text{S.P.} = ₹16.25$$

$$\text{C.P.} > \text{S.P.}$$

$$\text{Loss} = 20.25 - 16.25 = 4$$

3. C.P. of 22 L milk = ₹550

$$\text{S.P. of 22 L milk} = 594$$

$$\text{Profit} = \text{S.P.} - \text{C.P.} = 594 - 550 = ₹44$$

4. C.P. of calculator = ₹472.50

$$\text{S.P. of calculator} = ₹496.00$$

$$\text{Profit because S.P.} > \text{C.P.}$$

$$\text{Profit} = 496.00 - 472.50 = ₹23.5$$

5. C.P. of roses = ₹15

$$\text{S.P. of roses} = ₹30$$

$$\text{Profit} = \text{S.P.} - \text{C.P.} = 30 - 15 = ₹15$$

6. Cost price of 15 dozen bananas = ₹400

$$\text{Selling price of bananas} = ₹300$$

$$\text{C.P.} > \text{S.P.}$$

$$\text{Loss} = 400 - 300 = ₹100$$

7. C.P. price of bicycle = 204 + 80 = ₹284 S.P. = ₹180

$$\text{Since, C.P.} > \text{S.P.}$$

$$\text{Loss} = 284 - 180 = ₹104$$

8. C.P. of an article = 2260 + 85 = ₹2345

$$\text{S.P. of an article} = ₹2450$$

$$\text{Profit} = 2450 - 2345 = ₹109$$

9. C.P. of dinning table =  $4500 + 100 = ₹4600$   
 S.P. of dinning table = ₹5000  
 Profit = S.P. - C.P. =  $5000 - 4600 = ₹400$
10. C.P. of 36 chairs =  $200 \times 36 = ₹7200$   
 S.P. of 36 chairs =  $240 \times 36 = ₹8640$   
 Profit = S.P. - C.P. =  $8640 - 7200 = ₹1440$

### Exercise 13.2

1. Find the selling price when :
- (a) C.P. = ₹15,116 Loss = ₹560  
 Loss = C.P. - S.P.  $560 = 15,116 - \text{S.P.}$   
 S.P. = C.P. - Loss  $15116 - 560 = 14,556$
- (b) C.P. = ₹460 Loss = ₹40  $\text{S.P.} = \text{C.P.} - \text{Loss} = 460 - 40 = ₹420$
- (c) C.P. = ₹338 Profit = ₹15  $\text{S.P.} = \text{C.P.} + \text{Profit} = 338 + 15 = ₹353$
- (d) C.P. = ₹5500 Profit = ₹230  $\text{S.P.} = \text{C.P.} + \text{Profit} = 5500 + 230 = ₹5730$
2. Find the cost price when :
- (a) S.P. ₹580 Profit = ₹80  $\text{C.P.} = \text{S.P.} - \text{Profit} = 580 - 80 = ₹500$
- (b) S.P. = ₹470 Profit = ₹60  $\text{C.P.} = \text{S.P.} - \text{Profit} = 470 - 60 = ₹410$
- (c) S.P. = ₹485 Loss = ₹75  $\text{C.P.} = \text{S.P.} + \text{Loss} = 485 + 75 = ₹560$
- (d) S.P. = ₹1040 Loss = ₹220  $\text{C.P.} = \text{S.P.} + \text{Loss} = 1040 + 220 = ₹1260$
3. S.P of lamp = ₹550  
 Profit = ₹86  
 C.P of Lmp = S.P - Profit  
 $= ₹(550 - 86) = ₹484$
4. S.P of colours = ₹2305  
 Loss. = ₹375  
 S.P of colours = SP + Loss  
 $= ₹(305 + 375) = ₹2690$
5. S.P of dress = ₹590  
 Loss = ₹25  
 C.P of dress = S.P + Loss  
 $= ₹(590 + 25) = ₹615$
6. S.P of bunch of grapes = ₹24.65  
 Profit = ₹6.50  
 C.P of bunch of grapes  
 $= \text{S.P} - \text{Profit}$   
 $= ₹(24.65 - 6.50) = ₹18.15$
7. C.P of flower pot = ₹750  
 Loss = ₹37  
 S.P of flower pot = C.P - Loss  
 $= ₹(750 - 37) = ₹713$
8. C.P of the apples =  $25 \times 18 = ₹450$   
 Profit = ₹90  
 S.P of the apples = C.P + Profit  
 $= ₹(450 + 90) = ₹540$

9. C.P of dress materail = ₹1322

Profit = ₹228

S.P of the dress material = C.P + Profit

= ₹(1322 + 228) = ₹1550

10. C.P of Enayclopedia = ₹4640

Profit = ₹460

S.P of Encyclopedia =

= ₹(4640 + 60) = ₹5100

### Exercise 13.3

1. Fill in the blanks :

(a) C.P. = ₹300                  Profit = ₹60

S.P. = C.P. + Profit

S.P. = 300 + 60 = ₹360

Profit % =  $\frac{60}{300} \times 100\% = 20\%$

(b) C.P. = ₹250

Profit =  $\frac{\text{Profit}}{250} \times 100$                    $8\% = \frac{\text{Profit}}{250} \times 100\%$

$\frac{8 \times 250}{100} = \text{Profit}$

Profit = ₹20

Profit = S.P. - C.P. = 20 + 250 = S.P. = ₹270

(c) C.P = ₹500

Loss 60%

Loss =  $500 \times \frac{60}{100} = ₹300$

S.P = ₹(500 - 300) ₹200

(d) C.P = ₹1000

S.P = ₹1130

Profit = ₹1130 - 1000 = ₹130

Profit %  $\frac{130}{100} \times 100 = 13\%$

(e) C.P = ₹185,    Loss = ₹74

S.P = ₹111

Loss % =  $\frac{74}{185} \times 100 = 40\%$

(f) C.P = ₹2000, S.P = ₹1780

Loss = C.P - S.P

= ₹(2000 - 1780) = ₹220

Loss % =  $\frac{220}{2000} \times 100 = 11\%$

2. C.P. of C.D = ₹125                  S.P. of C.D = ₹150

Profit = S.P. - C.P. = 150 - 125 = ₹25

Profit % =  $\frac{\text{Profit}}{\text{C.P.}} \times 100\% = \frac{25}{125} \times 100\% = 20\%$

3. C.P. of Almirah = ₹750    S.P. of Almirah = ₹900

Profit = S.P. - C.P. = 900 - 750 = ₹150

Profit % =  $\frac{\text{Profit}}{\text{C.P.}} \times 100\% = \frac{150}{750} \times 100 = 20\%$

4. C.P. of spices = ₹335    S.P. of spices = ₹425  
 Profit = S.P. – C.P. = 425 – 335 = ₹90  
 Profit % =  $\frac{\text{Profit}}{\text{C.P.}} \times 100\% = \frac{90}{335} \times 100\% = 26.86\%$
5. C.P. of Kite paper = ₹760    S.P. of kite paper =  $500 \times 3 = ₹1500$   
 Profit = 1500 – 760 = ₹740    Profit % =  $\frac{740}{760} \times 100 = 97.36\%$
6. C.P. of 24m cloth = ₹40    S.P. of 12m cloth = ₹45  
 S.P. of 12m cloth = ₹38    S.P. of 24m cloth = 45 + 38 = 83  
 Profit = S.P. – C.P. = 83 – 40 = ₹43    Profit % =  $\frac{43}{40} \times 100\% = 3.75\%$
7. C.P. of Jeans = ₹400    Loss = ₹120    Loss = C.P. – S.P.  
 Loss % =  $\frac{\text{Loss}}{\text{C.P.}} \times 100\% = \frac{120}{400} \times 100\% = 30\%$
8. S.P. = ₹200    C.P. = ₹250    Loss = 250 – 200 = ₹50  
 Loss % =  $\frac{\text{Loss}}{\text{C.P.}} \times 100\% = \frac{50}{250} \times 100\% = 20\%$
9. C.P. of the car = 210    Loss = 42  
 Loss % =  $\frac{\text{Loss}}{\text{C.P.}} \times 100\% = \frac{42}{210} \times 100\% = 20\%$
10. C.P. = ₹3000    S.P. = ₹2700  
 Loss = C.P. – S.P. = 3000 – 2700 = 300  
 Loss % =  $\frac{\text{Loss}}{\text{C.P.}} \times 100\% = \frac{300}{3000} \times 100\% = 10\%$

**Test Paper-II,    Model Paper-II**    Do yourself.

## Chapter-14 (Shopping Bills)

### Exercise 14.1

1. Bill of Ms. Shweta consists of:  
 5 packets of biscuits =  $10 \times 5 = ₹50$   
 3 packets of noodles =  $10 \times 3 = ₹30$   
 A bottle of pickle = ₹72 = ₹72  
 4 packets of chips =  $12 \times 4 = ₹48$   
 Total amount =  $(50 + 30 + 72 + 48)$   
 = ₹200

2. Bill no. cure 7/16 Date: 31-01-12 Sold to: Mr. Robin	Cure medical Centre 7/16 Saket Road
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S.No.	Particular	quantity	Rate	Amt.
1.	Strips of ferrium	2	45	90
2.	Bottle of Triaminic syrup.	1	26	26
3.	Strips of Cocin tablet	3	14	42
4.	Polybion syrubb	200ml	16	32
		Total		190.00

3.	Bill No. Fancy / 6 Date: 31-01-12 Sold to: Mrs. Poonam	Fancy Store Vasant Vihar Delhi
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S.No.	Particular	Quantity	Rate	Amt.
1.	Lace	6	10	60.00
2.	Artificial flower	1	20	20.00
3.	Thread roll	5	6	30.00
4.	Needles	2	2	4.00
5.	Buttons	3	10	30.00
		Total		144.00

4.	Bill No. Pooja / 7 Date: 31-01-12 Sold to: Mrs. Aditi	Pooja General Store Meerut
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S.No.	Particular	Quantity	Rate	Amt.
1.	Bathing soaps	2	120	240.00
2.	Toothpaste	1	35	35.00
3.	Oil	2	95	190.00
4.	Detergent powder	1	65	65.00
5.	Sugar	$\frac{1}{2}$	35	16.00
		Total		546.00

5.	Bill No. Chinese Date: 31-01-12 Sold to: Mr. Charlie 360	Chinese Restaurant China Town
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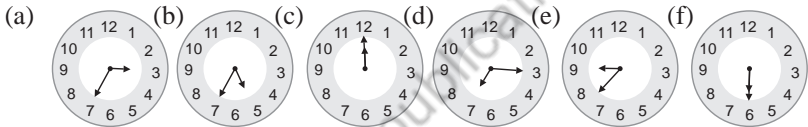
S.No.	Particular	Quantity	Rate	Amt.
1.	Garlic chicken	2	60	120
2.	Americal choupsey	3	55	165
3.	Fried Prawns	3	65	195
4.	Fried rice	2	50	100
		Total		580

6.	Bill No.	Tina provision		
	Date: 31-01-12	Dadar		
	Sold to:	Mumbai		
S.No.	Particular	Quantity	Rate	Amt.
1.	Rice	5	25	125
2.	Dal	$\frac{1}{2}$	70	35
3.	Sugar	3	40	120
4.	Tea	$\frac{1}{2}$	160	80
		Total		360

## Chapter-15 (Time Table)

### Exercise 15.1

- Fill in the blanks :  
(a) 15:30 (b) 00:35 (c) 10:00 (d) 22:00 (e) 31 days (f) 87 days
- Draw the hand to shows the given time :



- How many seconds are there in :  
 (a) 15 minutes  
 $1 \text{ min} = 60 \text{ sec.}$        $15 \text{ min.} = (15 \times 60) \text{ sec.} = 900 \text{ sec.}$   
 (b) 2 hrs  
 $1 \text{ hr} = 3600 \text{ sec.}$        $2 \text{ hr} = 2 \times 3600 = 7200 \text{ sec.}$   
 (c) 7 min. 18 sec.  
 $1 \text{ min} = 60 \text{ sec.}$        $7 \text{ min} = 7 \times 60 \text{ sec.} = 420 \text{ sec.}$   
 $\text{Total} = 420 + 18 = 438 \text{ sec.}$   
 (d)  $\frac{11}{15}$  min.  
 $1 \text{ min.} = 60 \text{ sec.}$        $\frac{11}{15} \text{ min.} = \frac{11}{15} \times 60 \text{ sec.} = 44 \text{ sec.}$
- How many minutes are there in:  
 (a) 4 hours  
 $1 \text{ hr} = 60 \text{ min}$        $4 \text{ hrs} = 4 \times 60 \text{ min} = 240 \text{ min.}$   
 (b)  $\frac{3}{4}$  hours  
 $1 \text{ hr} = 60 \text{ min}$        $\frac{3}{4} \text{ hr} = \frac{3}{4} \times 60 = 45 \text{ min.}$

(c) 5 hours 25 min

$$1 \text{ hr} = 60 \text{ min}$$

$$5 \text{ hr} = (5 \times 60) \text{ min} = 300 \text{ min} + 25 \text{ min} = 325 \text{ min}$$

(d)  $9\frac{1}{2}$  hrs       $\frac{19}{2}$  hrs

$$1 \text{ hr} = 60 \text{ min} \quad \frac{19}{2} \text{ hr} = \frac{19}{2} \times 60 = 570 \text{ min}$$

5. How many minutes are there in:

(a) 720 sec.

$$1 \text{ sec.} = \frac{1}{60} \text{ sec.} \quad 720 \text{ sec.} = \frac{1}{60} \times 720 = 12 \text{ min}$$

(b) 1800 sec.       $1 \text{ sec.} = \frac{1}{60} \text{ min}$

$$1800 \text{ sec.} = \frac{1800}{60} = 30 \text{ min}$$

(c) 480 sec.

$$1 \text{ sec.} = \frac{1}{60} \text{ min} \quad 480 \text{ sec.} = \frac{480}{60} = 8 \text{ min.}$$

(d) 145 sec.

$$1 \text{ sec.} = \frac{1}{60} \text{ min} \quad 145 \text{ sec.} = \frac{145}{60} = 2 \text{ min } 25 \text{ seconds}$$

6. How many hours are there in :

(a) 480 min

$$1 \text{ min} = \frac{1}{60} \text{ hrs.} \quad 480 \text{ min} = \frac{480}{60} \text{ hrs.} = 8 \text{ hrs.}$$

(b) 205 min

$$1 \text{ min} = \frac{1}{60} \text{ hrs.} \quad 205 \text{ min} = \frac{205}{60} \text{ hrs.} = 3 \text{ hrs. } 25 \text{ min}$$

(c) 180 min

$$1 \text{ min} = \frac{1}{60} \text{ hrs.} \quad 180 \text{ min} = \frac{180}{60} \text{ hrs.} = 3 \text{ hrs.}$$

(d) 90 min

$$1 \text{ min} = \frac{1}{60} \text{ hrs.} \quad 90 \text{ min} = \frac{90}{60} \text{ hrs.} = 1 \text{ hrs. } 30 \text{ min}$$

7. How many days are there in :

(a) 90 hrs.

$$24 \text{ hrs.} = 1 \text{ day} \quad 90 \text{ hrs.} = \frac{90}{24} \text{ day} = 3 \text{ days } 18 \text{ hrs.}$$

(b) 240 hrs.

$$24 \text{ hrs.} = 1 \text{ day} \quad 240 \text{ hrs.} = \frac{240}{24} \text{ day} = 10 \text{ days}$$

(c) 60 hrs.

$$24 \text{ hrs.} = 1 \text{ day} \quad 60 \text{ hrs.} = \frac{60}{24} \text{ day} = 2 \text{ days } 12 \text{ hrs.}$$

(d) 130 hrs.

$$24 \text{ hrs.} = 1 \text{ day} \quad 130 \text{ hrs.} = \frac{130}{24} \text{ day} = 5 \text{ days } 10 \text{ hrs.}$$

8. How many hours are there in :

(a) 10 days 23 hours

$$1 \text{ day} = 24 \text{ hrs.}$$

$$10 \text{ days} = 24 \times 10 \text{ hrs.}$$

$$(240 + 23) \text{ hrs.} = 263$$

(b) 4 days

$$1 \text{ day} = 24 \text{ hrs.}$$

$$4 \text{ days} = 24 \times 4 \text{ hrs.} = 96 \text{ hrs.}$$

(c) 8 days

$$1 \text{ day} = 24 \text{ hrs.}$$

$$8 \text{ days} = 24 \times 8 \text{ hrs.} = 192 \text{ hrs.}$$

(d) 5 days 12 hours

$$1 \text{ day} = 24 \text{ hrs.}$$

$$5 \text{ days} = 24 \times 5 \text{ hrs.} = 132 \text{ hrs.}$$

9. (a) Starting time of circus = 5:45 p.m.

Ending time of circus = 2 hrs 35 min

8:20 p.m.

(b) Starting time of circus = 6:35 p.m.

Ending time of circus = 8:55 p.m. = 2 hrs. 20 min

10. Time for an advertisement = 30 sec.

Days of an advertisement = 10 days

Total minutes of an advertisement =  $30 \times 10 = 300$  sec.

$$1 \text{ sec.} = \frac{1}{60} \text{ min}$$

$$300 \text{ sec.} = \frac{300}{60} \text{ min.} = 5 \text{ min.}$$

11. Time spend for fishing = 1 hr. 43 min

$$1 \text{ hr } 43 \text{ min}$$

Time spend for swimming = 1 hr. 20 min

$$1 \text{ hr } 20 \text{ min}$$

or

Total time spend on fishing and swimming

$$\frac{2 \text{ hr } 63 \text{ min}}{}$$

3 hrs. 3 min.

12. Captain played in 1st innings = 4 hrs 24 min 13 sec.

Captain played in 2nd innings = 3 hrs. 49 mins. 35 sec.

Total time he played in the cricket match.

$$= (4 \text{ hrs } 24 \text{ min } 13 \text{ sec}) + (3 \text{ hrs. } 49 \text{ min } 35 \text{ sec.})$$

$$= 8 \text{ hrs } 13 \text{ mins } 48 \text{ sec.}$$

13. Madhuri joined dance class = 4 weeks

Ending time of dance class = October 5th

Time of joining = 7th Sep.

14. Sports day of Anushka = 25th March.

Time to practicing = 30 days earlier

Starting day of practicing = 23<sup>rd</sup> Feb.

15. Advertisement in programmes = 11 min

$$11 \text{ min} = 11 \times 60 \text{ sec.} = 660 \text{ sec.}$$

### Exercise 15.2

- (a) The train starts at 8:30 p.m.  
(b) Train halt at town A = 5 min  
(c) Time taken by train from town A to town E is 7 hr. 35 min
- (a) Train starts from Madurai at 8:45 p.m.  
(b) Train will reach Villupuram Junction at 2:45 a.m.  
(c) Time taken by the train from Madurai Central to Chennai Egmore is 9 hr.  
(d) Halting time at Dindigul Junction in 5 mins.
- Train leaves Jaipur on Friday = 10:55 p.m.  
Train reaches Chennai on Sat. = 6:00 a.m.  
Duration of the journey = 7 hrs. 5 mins
- Train leaves Bangalore on Monday. = 0815 hrs.  
Train reaches Delhi on Tuesday. = 1810 hrs.  
Duration of the journey. = 33 hrs. 55 min
- Bus departure time from Jaipur = 9:40 p.m.  
Bus arrival time at Mumbai = 5:50 a.m.  
Duration of the journey = 8 hr. 10 min.
- Departure time from Delhi = 2230 hrs.  
Arrival time at Kolkata = 215 hrs.  
Time taken to reach Kolkata = 3 hrs. 45 mins

### Exercise 15.3

Tick (✓) the correct answer :

- (a) 37 minutes      2. (c) 439 km      3. (c) 5 min
- (a) 8 minutes      5. (c) 296 km      6. (a) 11:06 a.m.
- (a) 9:10 a.m.      8. (b) Garibrath Express.
- (b) 5:00 a.m.      10. (a) Yes

## Chapter-16 (Speed, Distance and Time)

### Exercise 16.1

- Distance = 65 km      Time = 1 hrs.  
Speed =  $\frac{\text{Distance}}{\text{Time}} = \frac{65}{1}$  hrs = 65 km / hr
- Distance = 390 km      Time = 6 hr. 30 min.  
Speed =  $\frac{390}{6.50} = 60$  km / hr.
- Distance = 140 m      Time = 4 hrs.  
Speed =  $\frac{140}{4} = 35$  km / h

4. Distance = 300 km                      Time = 6 hrs.

$$\text{Speed} = \frac{\text{Distance}}{\text{Time}} = \frac{300}{6} = 50 \text{ km / hr.}$$

5. Express the following in m / s:

(a) 36 km / h              36 km / h  $\rightarrow$  m / s =  $\frac{36 \times 1000}{60 \times 60} = 10 \text{ m / sec.}$

(b) 45 km / h =  $\frac{45 \times 1000}{60 \times 60} = 12.5 \text{ m / sec.}$

(c) 18 km / h =  $\frac{18 \times 1000}{60 \times 60} = 5 \text{ m / sec.}$

(d) 84 km / h =  $\frac{84 \times 1000}{60 \times 60} = 23.3 \text{ m/sec.}$

6. Express the following in m / min:

(a) 1 km / h =  $\frac{1 \times 1000}{60} = 16.6 \text{ m / min.}$

(b) 6 km / h =  $\frac{60 \times 1000}{60} = 1000 \text{ m / min}$

(c) 36 km / h =  $\frac{36 \times 1000}{60} = 600 \text{ m / min}$

(d) 84 km / h =  $\frac{84 \times 1000}{60} = 1400 \text{ m / min}$

7. Express the following in Km/h :

(a) 25m/s =  $\frac{25 \times 3600}{1000} = 90 \text{ km/hr.}$

(b) 6.5 m/s =  $\frac{6.5 \times 3600}{1000} = 23.4 \text{ km/hr.}$

(c) 40 m/s =  $\frac{40 \times 3600}{1000} = 144 \text{ km/hr.}$

(d) 55 m/s =  $\frac{55 \times 3600}{1000} = 198 \text{ km/hr.}$

8. Distance = 200 m                      Time = 25 sec.

$$\text{Speed} = \frac{\text{Distance}}{\text{Time}} = \frac{200}{25} = 8 \text{ m/s.}$$

9. Distance = 210 km                      Speed = 35 km/hr.

$$\text{Time} = \frac{\text{Distance}}{\text{Speed}} = \frac{210}{35} = 6 \text{ hr.}$$

10. Time = 30 sec.

Speed = 5 m/sec.

Distance = Speed  $\times$  Time = 30  $\times$  5 = 150 m

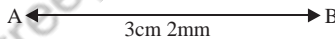
11. Speed = 88.5 km/h      Distance = 309.75 km  
 Time =  $\frac{\text{Distance}}{\text{Speed}} = \frac{309.75 \times 10}{88.5 \times 100} = 3.5$  hrs
12. Distance = 320 km      Time = 4 hrs.  
 Speed =  $\frac{\text{Distance}}{\text{Time}} = \frac{320}{4} = 80$  km/hr.
13. Distance = 5km  $\rightarrow$  5000 m  
 Speed = 5 m/s      Time =  $\frac{\text{Distance}}{\text{Speed}} = \frac{5000}{5} = 1000$  sec. or 16 min. 40 sec.
14. Speed = 2 m/s  
 Time = 30 min =  $30 \times 60$  sec. = 1800 sec.  
 Distance = Speed  $\times$  Time =  $(2 \times 1800)$  m. = 3600 m. or 3 km. 600 m
15. Distance = 8km      Time =  $\frac{1}{2}$  hr.  
 Speed =  $\frac{\text{Distance}}{\text{Time}} = \frac{8}{\frac{1}{2}} = (8 \times 2)$  km/h = 16 km/h

## Chapter-17 (Line and Angles)

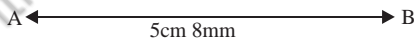
### Exercise 17.1

1. Draw a line segment of length:

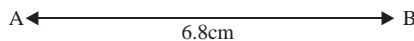
(a) 3cm 2mm



(b) 5cm 8mm



(c) 6.8 cm



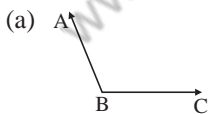
2. Find the lengths of the following line segments :

(a) 3.6 cm

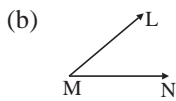
(b) 4.2 cm

(c) 3.7 cm

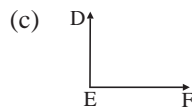
3. Name the vertex and the sides of each angle :



Vertex = B  
 Sides = AB, BC



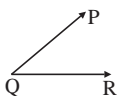
Vertex = M  
 Sides = LM, MN



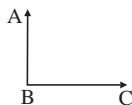
Vertex = E  
 Sides = DE, EF

4. Name each angle :

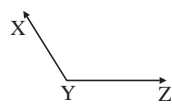
(a) Acute angle



(b) Right angle



(c) Obtuse angle



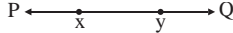
5. Make each as line, ray or line segment :

(a) line

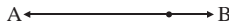


(d) ray

(b) line segment



(c) ray



6. Fill in the blanks :

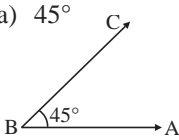
(a) A ray has one end-point

(b) A line segment has two end-point

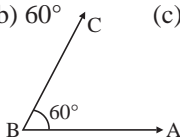
(c) A line has no end point

7. With the help of a protractor draw angles of the measures:

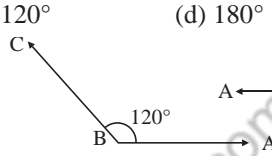
(a)  $45^\circ$



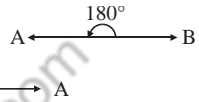
(b)  $60^\circ$



(c)  $120^\circ$



(d)  $180^\circ$



8. Write the kind of each angle :

(a)  $50^\circ$  – acute angle

(b)  $90^\circ$  – right angle

(c)  $120^\circ$  – obtuse angle

(d)  $320^\circ$  – reflex angle

### Exercise 17.2

1. Answer the following questions :

(a) One and only one

(b) A point

(c) Two lines

(d) Infinite

2. Fill in the blanks :

(a) Two line can intersect only in one point.

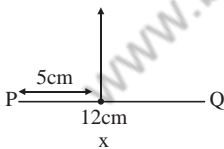
(b) Intersecting lines meet at one point.

(c) A line has no end-point.

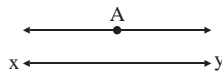
(d) Ray has one end-point.

(e) Line segment has fixed end point.

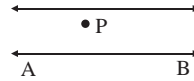
3.



4.



5.



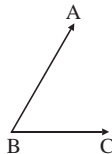
### Exercise 17.3

1. Name each of the angle in 3 different ways:

$\angle ABC$

$\angle CBA$

$\angle B$



2. Write the fraction of revolution clockwise which the minute hand of a clock turn when it goes from:

- (a)  $12 \text{ to } 9 = \frac{3}{4}$                       (b)  $8 \text{ to } 2 = \frac{1}{2}$   
 (c)  $2 \text{ to } 5 = \frac{1}{4}$                       (d)  $2 \text{ to } 11 = \frac{3}{4}$

3. Write the number of right angles in each :

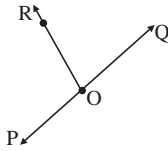
- (a)  $90^\circ = 1$                       (b)  $360^\circ = 4$   
 (c)  $180^\circ = 2$                       (d)  $270^\circ = 3$

4. Classify the following angles :

- (a)  $120^\circ =$  Obtuse angle                      (b)  $75^\circ =$  Acute angle  
 (c)  $95^\circ =$  Obtuse angle                      (d)  $180^\circ =$  Straight angle  
 (e)  $165^\circ =$  Obtuse angle                      (f)  $280^\circ =$  Reflex angle  
 (g)  $360^\circ =$  Complete angle                      (h)  $90^\circ =$  Right angle

5. Fill in the blanks :

- (a) ray  
 (b) PQ  
 (c) O  
 (d)  $\angle$  POR  
 (e)  $180^\circ$   
 (f) Supplementary



6. Classify the angles in to degrees :

- (a) One right angle =  $90^\circ$   
 (b) Two right angle =  $90 + 90 = 180^\circ$   
 (c) Three right angle =  $90 + 90 + 90 = 270^\circ$   
 (d) Four right angle =  $90 + 90 + 90 + 90 = 360^\circ$

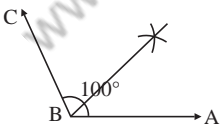
7. Write the supplementary angles of the following :

- (a)  $140^\circ = 180^\circ - 140^\circ = 40^\circ$                       (b)  $65^\circ$                        $180^\circ - 65^\circ = 115^\circ$   
 (c)  $115^\circ = 180^\circ - 115^\circ = 65^\circ$                       (d)  $170^\circ$                        $180^\circ - 170^\circ = 10^\circ$

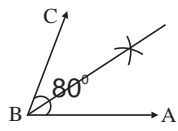
8. Write the complementary angles of each of the following :

- (a)  $20^\circ = (90^\circ - 20^\circ) = 70^\circ$                       (b)  $50^\circ$                        $(90 - 50)^\circ = 40^\circ$   
 (c)  $62^\circ = (90 - 62)^\circ = 28^\circ$                       (d)  $75^\circ$                        $(90 - 75)^\circ = 15^\circ$

9.



10.



## Chapter-18 (Circle)

### Exercise 18.1

1. Find the diameter of a circle whose radius is :  
 (a) 3.5 cm  
 $(3.5 \times 2) \text{ cm}$  ;                      diameter = 7cm

(b)  $5\frac{2}{3}$  cm

$\left(\frac{17}{3} \times 2\right)$  cm , diameter = 11.3 cm

(c) 8 cm

$(8 \times 2)$  cm , diameter = 16 cm

(d) 14 cm

$(14 \times 2)$  cm , diameter = 28 cm

(e) 6.5 cm

$(6.5 \times 2)$  cm , diameter = 13 cm

(f) 12.2 cm

$(12.2 \times 2)$  cm , diameter = 24.4 cm

2. Find the radius of a circle whose diameter :

(a) 12 cm , Radius =  $\frac{12}{2} = 6$  cm

(b) 8.8 cm , Radius =  $\frac{8.8}{2} = 4.4$  cm

(c) 9.8 cm , Radius =  $\frac{9.8}{2} = 4.9$  cm

(d) 6.8 cm , Radius =  $\frac{6.8}{2} = 3.4$  cm

(e) 20 cm , Radius =  $\frac{20}{2} = 10$  cm

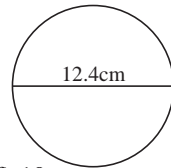
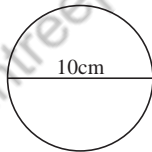
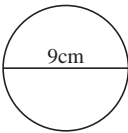
(f) 11.8 cm , Radius =  $\frac{11.8}{2} = 5.9$  cm

3. Draw circles of radius :

(a) 3 cm

(b) 5 cm

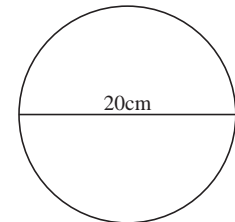
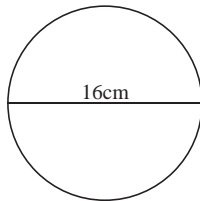
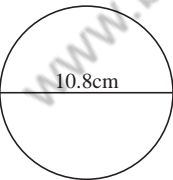
(c) 6.2 cm



(d) 5.4 cm

(e) 8 cm

(f) 10 cm



4. Find the circumference of a circle whose diameter is :

(a) 98 cm

Circumference =  $\frac{22}{7} \times \text{diameter} = \frac{22}{7} \times 98 = 308$  cm

(b) 77 cm =  $\frac{22}{7} \times 77 = 242$  cm

(c) 14 cm =  $\frac{22}{7} \times 14 = \frac{308}{7} = 44$  cm

$$(d) 22.4 \text{ cm} = \frac{22}{7} \times 224 = 70.4 \text{ cm} \quad (e) 56 \text{ cm} = 56 \times \frac{22}{7} = 176 \text{ cm}$$

$$(f) 63 \text{ cm} = \frac{22}{7} \times 63 = 198 \text{ cm}$$

5. Find the diameter of a circle whose circumference is :

(a) 66 cm

$$\text{Diameter} = \text{Circumference} \times \frac{7}{22}$$

$$66 \times \frac{7}{22} = 21 \text{ cm}$$

$$(b) 88 \text{ cm} = 88 \times \frac{7}{22} = 28 \text{ cm} \quad (c) 3.3 \text{ cm} = 3.3 \times \frac{7}{22} = 1.05 \text{ cm}$$

$$(d) 15\frac{1}{3} \text{ cm} = \frac{46}{3} \times \frac{7}{22} = 4.878 \text{ cm} \quad (e) 58.3 \text{ cm} = 58.3 \times \frac{7}{22} = 18.55 \text{ cm}$$

$$(f) 69.3 \text{ cm} = 69.3 \times \frac{7}{22} = \frac{485.1}{22} = 22.05 \text{ cm}$$

6. Fill in the blanks :

(a) radius      (b)  $\pi$       (c) chord      (d) circumference      (e) Circle

### Test Paper-III

1. Find profit or loss in the following cases :

(a) C.P. = ₹81 + ₹9, S.P. = ₹100  
Profit = S.P. - C.P. = 100 - 81 = ₹19

(b) C.P. = ₹16, S.P. = ₹14  
Loss = C.P. - S.P. = 16 - 14 = ₹2

(c) CP. = ₹620, S.P. = ₹700  
Profit = S.P. - C.P. = 700 - 620 = ₹80

(d) C.P. = ₹50.25, S.P. = ₹48  
Loss = 50.25 - 48 = ₹2.25

2.

Sr.No.	Particular	Quantity	Rate	Amt.
1.	Oil	5	40	200
2.	Pulses	0.500 kg	60	30
3	Rice	4	30	120
4.	Sugar	8 kg	50	400
	Total			750

3. Bus left Delhi at = 11:40 a.m.  
Bus reached Udaipur = 4:30 p.m.  
Duration of the journey = 4 hors 50 min.

4. Distance = 320 km  
Time = 4 hrs.

$$\text{Speed} = \frac{\text{Distance}}{\text{Time}} = \frac{320}{4} = 80 \text{ km/hr}$$

5. 1. (c) 439 km 2. (a) 269 km 3. (c) 5 min. 4. (b) 9:10 a.m. 5. (a) 9:06 a.m.

## Chapter-19 (Triangle and Quadrilateral)

### Exercise 19.1

- State true or false :
 

(a) False	(b) True	(c) False
(d) True	(e) False	(f) False
- Name the triangle in which:
  - Two sides are equal – Isosceles triangle
  - All sides are unequal – Scalene triangle
  - All sides are equal – Equilateral triangle
- State the type of triangle the lengths of whose three sides are :
  - 5cm, 5cm, 5cm - Equilateral triangle
  - 4.5, 4.5, 4.5 cm - Equilateral triangle
  - 12cm, 3cm, 10cm - Scalene triangle
  - 6cm, 6.8cm, 15cm - Scalene triangle
- State the type of triangle :
 

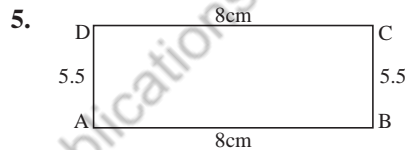
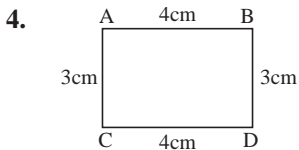
(a) $50^\circ, 90^\circ, 40^\circ$ Right angle triangle	(b) $40^\circ, 60^\circ, 80^\circ$ Acute angle
(c) $60^\circ, 60^\circ, 60^\circ$ Acute angle	(d) $100^\circ, 40^\circ, 40^\circ$ Obtuse angle
- Find the third angle :
 

(a) $50^\circ$ and $70^\circ$ $50 + 70 + x = 180$ $120^\circ + x = 180^\circ$ $x = 180^\circ - 120^\circ = 60^\circ$	(b) $60^\circ$ and $100^\circ$ $60 + 100 + x = 180$ $160^\circ + x = 180^\circ$ $x = 180^\circ - 160^\circ = 20^\circ$
(c) $80^\circ$ and $35^\circ$ $80 + 35 + x = 180$ $115^\circ + x = 180^\circ$ $x = 180^\circ - 115^\circ = 65^\circ$	(d) $100^\circ$ and $40^\circ$ $100 + 40 + x = 180$ $140^\circ + x = 180^\circ$ $x = 180^\circ - 140^\circ = 40^\circ$
(e) $55^\circ$ and $50^\circ$ $55 + 50 + x = 180$ $105^\circ + x = 180^\circ$ $x = 180^\circ - 105^\circ = 75^\circ$	

6. Fill in the blanks :
- Isosceles triangle
  - Acute angled
  - Equilateral triangle
  - Right angled
  - Scalene triangle

### Exercise 19.2

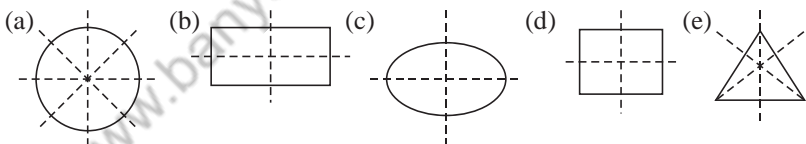
- Sum of quadrilateral =  $360^\circ$   
 $50 + 70 + 80 + x = 360^\circ$   
 $200^\circ + x = 360^\circ$   
 $x = 360^\circ - 200^\circ = 160^\circ$  or  $\angle S = 160^\circ$
- Sum of quadrilateral =  $360^\circ$   
 $100 + 100 + 100 + x = 360^\circ$   
 $300^\circ + x = 360^\circ$   
 $x = 360^\circ - 300^\circ = 60^\circ$  or  $\angle D = 160^\circ$
- Measure of the fourth angle.  
 $65^\circ + 100^\circ + 120^\circ + x = 360^\circ$   
 $285^\circ + x = 360^\circ$   
 $x = 360^\circ - 285^\circ = 75^\circ$



## Chapter-20 (Symmetry and Patterns)

### Exercise 20.1

1. Draw the lines of symmetry :



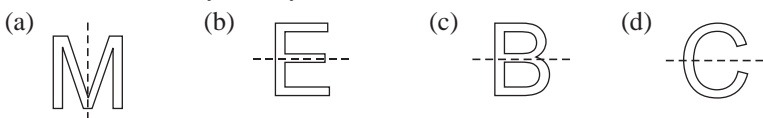
2. Write the number of lines of symmetry in:

- A circle = infinite
- A rectangle = two
- A square = four
- A triangle = three

3. Write whether the given objects are symmetric or not :

- Yes
- Yes
- Yes
- Yes
- Yes

4. Draw the lines of symmetry :

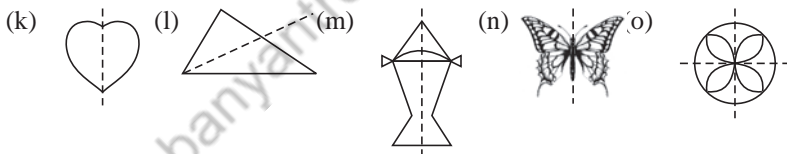
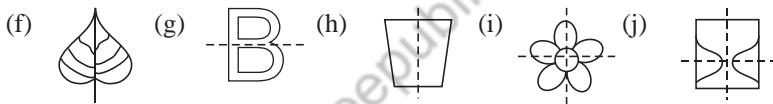
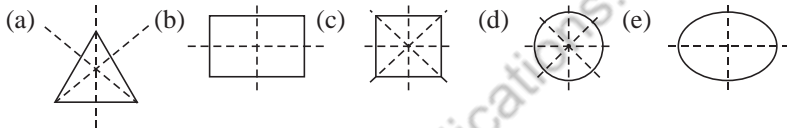


5. Complete the patterns :



### Exercise 20.2

- Is the dotted line a line of symmetry?  
(a) Yes (b) No (c) Yes (d) No (e) No
- Write whether the following objects are symmetric or not?  
(a) Yes (b) No (c) Yes (d) Yes (e) Yes
- Draw lines of symmetry :



4. Complete the following figures in order to make them symmetric:

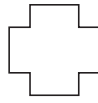


5. Write the number of lines of symmetry :

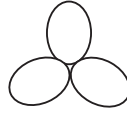
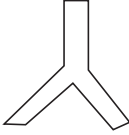
- (a) 2 (b) 2 (c) 2 (d) 1  
(e) 2 (f) 2

### Exercise 20.3

- Which of the following shapes will look the same after  $\frac{1}{4}$  turn?



2. Which of the following shapes will look the same after  $\frac{1}{2}$  turn?



3. Write  $\frac{1}{3}$  or  $\frac{1}{6}$  turn, the shapes will need to come back to their original position:

(a)  $\frac{1}{6}$

(b)  $\frac{1}{6}$

(c)  $\frac{1}{6}$

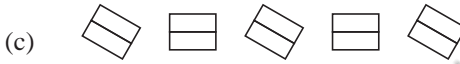
(d)  $\frac{1}{3}$

(e)  $\frac{1}{6}$

(f)  $\frac{1}{3}$

### Exercise 20.4

Look at the pattern and complete the patterns till you reach at the first position :



## Chapter-21 (Area)

1. Find the area of the rectangle :

(a)  $l = 10 \text{ cm}$        $b = 8 \text{ cm}$

$$\text{Area} = l \times b = 10 \times 8 = 80 \text{ cm}^2$$

(b)  $l = 15 \text{ cm}$        $b = 2 \text{ cm}$

$$\text{Area} = l \times b = 15 \times 2 = 30 \text{ cm}^2$$

(c)  $l = 8.5 \text{ cm}$        $b = 6 \text{ cm}$

$$\text{Area} = l \times b = 8.5 \times 6 = 51 \text{ cm}^2$$

(d)  $l = 17.2 \text{ cm}$        $b = 4 \text{ cm}$

$$\text{Area} = l \times b = 17.2 \times 4 = 68.8 \text{ cm}^2$$

(e)  $l = 20.5 \text{ cm}$        $b = 13 \text{ cm}$

$$\text{Area} = l \times b = 20.5 \times 13 = 266.5 \text{ cm}^2$$

(f)  $l = 3.7 \text{ cm}$        $b = 10 \text{ cm}$   
 $\text{Area} = l \times b = 3.7 \times 10 = 37 \text{ cm}^2$

2. Find the length of rectangle whose:

(a)  $A = 320 \text{ cm}^2$ ,  $b = 16 \text{ cm}$

$$l = \frac{320}{16} = 20 \text{ cm}$$

(b)  $\text{Area} = 340 \text{ cm}^2$        $b = 17 \text{ cm}$

$$l = \frac{340}{17} = 20 \text{ cm}$$

(c)  $\text{Area} = 216 \text{ cm}^2$        $b = 12 \text{ cm}$

$$l = \frac{216}{12} = 18 \text{ cm}$$

(d)  $\text{Area} = 1800 \text{ cm}^2$        $b = 40 \text{ cm}$

$$l = \frac{1800}{40} = 45 \text{ cm}$$

(e)  $\text{Area} = 393 \text{ cm}^2$        $b = 15 \text{ cm}$

$$l = \frac{393}{15} = 26.2 \text{ cm}$$

(f)  $\text{Area} = 240 \text{ cm}^2$        $b = 12 \text{ cm}$

$$l = \frac{240}{12} = 20 \text{ cm}$$

3. Find the breadth of rectangle whose :

(a)  $\text{Area} = 180 \text{ cm}^2$        $l = 15 \text{ cm}$

$$b = \frac{180}{15} = 12 \text{ cm}$$

(b)  $\text{Area} = 315 \text{ cm}^2$        $l = 21 \text{ cm}$

$$b = \frac{315}{21} = 15 \text{ cm}$$

(c)  $\text{Area} = 495 \text{ cm}^2$        $l = 33 \text{ cm}$

$$b = \frac{495}{33} = 15 \text{ cm}$$

(d)  $\text{Area} = 1875 \text{ cm}^2$        $l = 250 \text{ cm}$

$$b = \frac{1875}{250} = 7.5 \text{ cm}$$

(e)  $\text{Area} = 7500 \text{ m}^2$        $l = 150 \text{ m}$

$$b = \frac{7500}{150} = 50 \text{ m}$$

(f)  $\text{Area} = 10000 \text{ km}^2$        $l = 100 \text{ km}$

$$b = \frac{10000}{100} = 100 \text{ km}$$

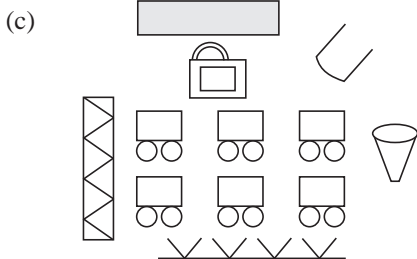
4. Find the area of the square :
- (a) 18 cm  $A = (18\text{cm})^2 = 324 \text{ cm}^2$
- (b) 25 cm  $A = (25\text{cm})^2 = 625 \text{ cm}^2$
- (c) 37 cm  $A = (37\text{cm})^2 = 1369 \text{ cm}^2$
- (d) 2.5 cm  $A = (2.5 \text{ cm})^2 = 6.25 \text{ cm}^2$
- (e) 12.16 cm  $A = (12.16 \text{ cm})^2 = 147.86 \text{ cm}^2$
- (f) 13.4 cm  $A = (13.4 \text{ cm})^2 = 179.56 \text{ cm}^2$
5. Area of the front of a watch =  $l \times b = (25 \times 23) \text{ mm} = 575 \text{ mm}^2$
6. Area of a rectangular envelope =  $200 \text{ cm}^2$   
 Length = 20 cm  
 Breadth =  $\frac{200}{20} \text{ cm} = 10 \text{ cm}$
7. Area of a rectangular field =  $400 \times 100 = 40000 \text{ m}^2$   
 Area of a square field =  $200 \times 200 = 40000 \text{ m}^2$   
 (a) Yes both fields have same area.  
 (b) Rectangle field require more fencing by 200m.
8. Area of a rectangular floor =  $(14 \times 10) \text{ m}^2 = 140 \text{ m}^2$   
 Number of tiles =  $\frac{140}{1} = 140$  tiles
9. Area of a balcony =  $(20 \times 18) \text{ m}^2 = (20 \times 18 \times 100 \times 100) \text{ cm}^2$   
 Length of bricks = 22.5 cm, breadth = 10 cm  
 No. of bricks =  $\frac{\text{Area of balcony}}{\text{Area of bricks}} = \frac{360 \times 100 \times 100}{22.5 \times 10} = 16000$

## Chapter-22 (Volume)

### Exercise 22.1

1. Find the volume of the following solids in cube cm :
- (a)  $l \times b \times h = \text{Volume}$   
 Volume =  $18 \times 12 \times 19 = 1944 \text{ m}^3$
- (b)  $l \times b \times h = \text{Volume}$   
 Volume =  $3 \times 1 \times 1 = 3 \text{ m}^3$
- (c)  $l \times b \times h = \text{Volume}$   
 Volume =  $8 \times 8 \times 8 = 512 \text{ m}^3$
- (d)  $l \times b \times h = \text{Volume}$   
 Volume =  $5 \times 4 \times 1 = 20 \text{ m}^3$
2. Find the volume of the following cuboids whose dimensions are :
- (a)  $l = 12\text{cm}$   $b = 10\text{m}$   $h = 7\text{cm}$   
 Volume =  $l \times b \times h$   
 Volume =  $12 \times 10 \times 7 = 840 \text{ cm}^3$





6. (a) Thanjavur (b) Vellore (c) Tuticorin (d) North

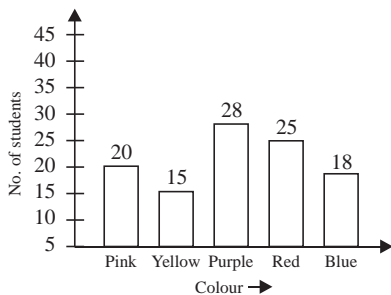
## Chapter-24 (Data Handling)

### Exercise 24.1

- Cricket is the most popular game among the students.
  - Tennis is the least popular game among the students.
  - Hockey is liked by 40 students.
  - Among Badminton and Hockey, Badminton is more popular.
  - 60 students like Football.
  - Among Cricket and Football, cricket is more popular.

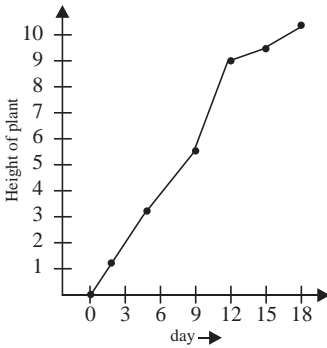
### Exercise 24.2

- Cricket is the most popular game.
  - Table Tennis is the least popular game.
  - 7 students like Table Tennis
  - The total number of students are 63
  - 4 students
- Reeta read the most number of the books
  - Sonia read least number of books
  - Rohan read 26 books
  - Sonu read 6 books more than Manju.
  - Manju read 12 books



- Sleep = 8 hours
  - Home work = 4 hours
  - School = 6 hours
  - Play = 3 hours
  - Other = 3 hours

5.



### Test Paper-IV

1. Write the number of right angles in each :

- (a)  $180^\circ = 2 (90^\circ \times 2)$       (b)  $90^\circ = 1 (90^\circ \times 1)$   
 (c)  $360^\circ = 4 (90^\circ \times 4)$       (d)  $270^\circ = 3 (90^\circ \times 3)$

2. Find the circumference of a circle whose diameter is :

- (a) 4 cm      (b) 5.6 cm  
 $C = \frac{22}{7} \times 4 = 12.5$  cm       $C = \frac{22}{7} \times 5.6 = 17.6$  cm  
 (c) 7 cm      (d) cm  
 $C = \frac{22}{7} \times 7 = 22$  cm       $C = \frac{22}{7} \times 17 = 53.42$  cm

3. State the type of triangle the measures of whose angles are :

- (a)  $70^\circ, 50^\circ, 60^\circ$  – Scalene triangle  
 (b)  $60^\circ, 60^\circ, 60^\circ$  – Equilateral triangle  
 (c)  $80^\circ, 80^\circ, 20^\circ$  – Isosceles triangle

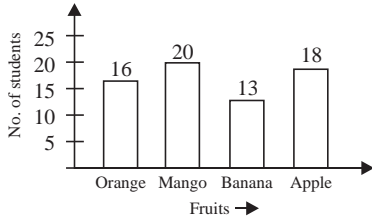
4. Find the area of the rectangle whose:

- (a)  $l = 8$  cm  $b = 6$  cm      (b)  $l = 18$  cm  $b = 3$  cm  
 $A = l \times b = 8 \times 6 = 48$  cm<sup>2</sup>       $A = l \times b = 18 \times 3 = 54$  cm<sup>2</sup>  
 (c)  $l = 8.5$  cm  $b = 13$  cm      (d)  $l = 20.5$  cm  $b = 10$  cm  
 $A = l \times b = 8.5 \times 13 = 110.5$  cm<sup>2</sup>       $A = l \times b = 20.5 \times 10 = 205$  cm<sup>2</sup>

5. Find the volume of the cuboids whose:

- (a)  $l = 10$ cm  $b = 8$  cm  $h = 6$ cm  
 Volume =  $l \times b \times h$   
 Volume =  $10 \times 8 \times 7 = 480$  cm<sup>3</sup>  
 (b)  $l = 5.5$  cm  $b = 3.5$  cm  $h = 54$ cm  
 Volume =  $l \times b \times h$   
 Volume =  $5.5 \times 3.5 \times 54 = 1039.5$  cm<sup>3</sup>

6. Draw a bar graph to represent the given data :



7. Fill in the blanks :

(a) No (b) Two (c) Radius (d) chord (e) Equilateral

### Model Paper-II

1. Write a decimal fraction for each :

(a)  $8.0 + 0.5 + 0.09 = 8.59 = \frac{859}{100}$

(b)  $30 + 8 + 0.6 + 0.01 = 38.61 = \frac{3861}{100}$

2. Convert :

(a)  $0.502 \text{ kg} \rightarrow \text{g}$

$(0.502 \times 1000) \text{ g} = 502 \text{ g}$

(b)  $89 \text{ kg} \rightarrow \text{g}$

$(89 \times 1000) \text{ g} = 89000 \text{ g}$

(c)  $1120 \text{ mL} \rightarrow \text{L}$

$(1120 \times \frac{1}{1000}) \text{ L} = 1.12 \text{ L}$  i.e., 1 l 12 mL

(d)  $3.5 \text{ L}$  in to kL

$\frac{3.5}{10} \times \frac{1}{1000} + 1 = \frac{35}{10000} \text{ kL} = 0.0035 \text{ kL}$

3. Convert the following fractions into percentages :

(a)  $\frac{2}{25} = \frac{2}{25} \times 100\% = 8\%$

(b)  $0.125 = \frac{125}{1000} \times 100\% = 12.5\%$

(c)  $0.036 = \frac{36}{1000} \times 100 = 3.6\%$

(d)  $\frac{59}{300} = \frac{59}{300} \times 100\% = 19.6\%$

4. Express the following in m/s :

(a)  $28 \text{ km/h} = \frac{28 \times 1000}{3600} = 7.78 \text{ m/s}$

(b)  $35 \text{ km/h} = \frac{35 \times 1000}{60 \times 60} = 9.72 \text{ m/s}$

(c)  $36 \text{ km/h} \left( \frac{36 \times 1000}{60 \times 60} \right) \text{ m/s} = 10 \text{ m/s}$







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