A BOOK OF MATHEMATICS

Teacher Manual Class-5

Chapter-1 (Revision)

1. Write the number name for each numeral :

(a) Eight lakh five thousand six hundred nine.

(b) Seven lakh fifty for thousand two hundred eighty four.

(c) Six thousand fifty seven.

(d) Two thousand eight hundred fifty six.

2. Write the following in figures :

(a) 73,08,500 (b) 8,30,071

(d) 20,00,492 (c) 46,70,000

3. Write the face value and place value of the coloured digit :

	Face Value	Place Value
(a) **4**1693	4	40,000
(b) 30**8**810	8	8000
(c) 48**1**576	1	1000
(d) 4236**8**	6	60

4. Write :

(a) The succesor of greatest 4-digit number (9999 + 1) = 10,000

(b) Number which is 1 less than one crore = 10000000 – 1 = 9999999

(c) Solution : 856664 comes just after 856663

(∵ after means just and after 856664)

(d) 6800 comes just before 6799

(∵ before means (6800 – 1 just 1 before)

5. The greatest 5-digit number = 85430

Smallest 5-digit number = 30458

Arrange the following in descending order :

6. 40,00,000 + 300000 + 20000 + 1000 + 500 + 70 + 1

Short form = 4321571.

7. 732406 is expanded form = 7,00,000 + 30,000 + 2000 + 400 + 6

8. Find the difference of :

(a)
```
   1 13
   7 2 3 5
 – 3 1 4 0
 [ 4 0 9 5 ]
```

(b)
```
     2 11 11
   4 9 3 2 1
 – 3 2 1 3 4
 [ 1 7 1 8 7 ]
```

(c)
```
   6 9 9 14
   7 0 0 4 3
 – 5 4 3 5 1
 [ 1 5 6 9 2 ]
```

(d)
```
   6 13 12 11
 1 7 4 3 1 5
 – 7 7 5 2 3
 [ 9 6 7 9 2 ]
```

9. Find the sum of :

(a)
```
     1 1 1 1 1
   4 2 3 4 2 6 7
     3 7 7 4 5 1
   + 6 7 3 7 8
 [ 4 6 7 9 0 9 6 ]
```

(b)
```
   1 0 1 1 1 1
     2 3 2 4 8 5
   9 3 1 4 4 4 8
   + 5 1 5 2 0 6
 [ 10 0 6 2 1 3 9 ]
```

(c)

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

(d)

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

10. (a) Descending order = 900123504, 617614807, 513612713, 317480107

(b) Descending order = 31005, 27018, 15325, 7361, 5016276

11. 51214 is subtracted from 87604 to make it equal to the sum of 12038 and 24352.

$$\begin{array}{r} \boxed{1} \\ 1\ 2\ 0\ 3\ 8 \\ +\ 2\ 4\ 3\ 5\ 2 \\ \hline \boxed{3\ 6\ 3\ 9\ 0} \end{array} \qquad \begin{array}{r} \boxed{5}\,\boxed{10} \\ 8\ 7\ \cancel{6}\ \cancel{0}\ 4 \\ -\ 3\ 6\ 3\ 9\ 0 \\ \hline \boxed{5\ 1\ 2\ 1\ 4} \end{array}$$

12. Simplify :

(a) $6 + 6 \div 6$

$6 + 1 = \mathbf{7}$

(b) $27 + 60 \div 10 - 3$

$27 + 6 - 3$ $\qquad$ $33 - 3 = \mathbf{30}$

(c) $3 \times 80 \div 10 + 5 - 7$

$3 \times 8 + 5 - 7$

$24 + 5 - 7$ $\qquad$ $29 - 7 = \mathbf{22}$

(d) Do it yourself.

13. Write the Roman numerals for each of the following :

(a) 24 – XXIV $\qquad$ (b) 28 – XXVIII

(c) 14 – XIV $\qquad$ (d) 51 – LI

14. Divide the following numbers and verify your answer :

(a) **Verification :**

Divisor × Quotient + Remainder = Dividend

85 × 979.82 + 30 = 83285 Ans.

Hence, 83285 ÷ 85 = 979.82 is correct answer.

$$\begin{array}{r|l} 85 & 83285 \ (979.82 \\ & -765 \\ & 0678 \\ & -595 \\ & 0835 \\ & -765 \\ & 0700 \\ & -680 \\ & 0200 \\ & -170 \\ & 30 \end{array}$$

(b) **Verification :**

Divisor × Quotient + Remainder = Dividend

868 × 250.77 + 864 = 2176.77

Hence, 217677 ÷ 868 = 250.77 it is the correct answer.

$$\begin{array}{r|l} 868 & 217677 \ (250.77 \\ & -1736 \\ & 04407 \\ & -4340 \\ & 006770 \\ & -6076 \\ & 6940 \\ & -6076 \\ & 864 \end{array}$$

15. Find the product :

(a) 4 × 57 × 124

$$\begin{array}{r} 57 \\ \times\ 4 \\ \hline 228 \end{array} \qquad \begin{array}{r} 228 \\ \times\ 124 \\ \hline 912 \\ 456\ \times \\ 228\ \times\ \times \\ \hline 28272 \end{array}$$

Hence, 4 × 57 × 124 = 28272

(b) 2185 × 471

```
      2 1 8 5
      × 4 7 1
      -------
      2 1 8 5
  1 5 2 9 5 ×
8 7 4 0 × × ×
-------------
8 8 9 5 1 3 5
```

Hence, 2185 × 471 = 1029135

16. Fill in the blanks :

(a) 11 × 6 = 66, So, 11 and 6 are factors of **66**.

(b) The smallest factor of 20 is **2**.

(c) **1** is a factor of every number.

(d) 4 and **2** are factors of 4.

17. Find the HCF

(a) 16, 36

```
16)36(2
  -32
   04)16(4
      -16
       00
```

Hence, HCF of 16, 32 = 4

(b) 24, 32, 64

```
24)32(1        8)64(8
  -24          -64
    8)24(3      00
     -24
      00
```

Hence, HCF of 24, 32, 64 = 8

18. Divide and reduce to the simple form:

(a) $\frac{6}{27}+\frac{5}{27}+\frac{14}{27}=\frac{6+5+14}{27}=\frac{25}{27}$

Note : If two or more fraction denominator is same then add them simple adding method.

(b), (c) and (d) do yourself like that.

19. Find the value of :

(a) $\frac{8}{10}\times\frac{3}{8}=\frac{3}{10}$

(b) $7\frac{1}{2}\times1\frac{8}{16}=\frac{15}{2}\times\frac{24}{16}$

$=\frac{15\times12}{16}=\frac{180}{16}=11.25$

(c) $\frac{3}{4}$ of $9=\frac{3}{4}\times9=\frac{27}{4}=6.75$

(d) Do yourself.

20. Solve the following:

(a) $2\frac{3}{6}\div48=\frac{15}{6}\div48$

$=\frac{6}{15}\times48=6\times3.2=19.2$

(b) $64\div8\frac{1}{6}=64\times\frac{6}{49}=\frac{384}{49}$

21. (a) Isosceles triangle (b) Right angled (c) Scalene (d) Obtuse angled

22. Price of a ball = ₹ 8

Thus, cost of 30 such balls = ₹ (8 × 30) = ₹ 240

23. Time of Mr. Sharma went to the market = 4:30 pm

Time of returned = 9:15 pm

Thus, he stay in the market =

```
 9 : 15  pm
-4 : 30  pm
 4 : 45  pm
```

24. Weight of sugar in granary = 435kg 365g

Weight of distributed sugar = 214kg 456g

Hence, weigh of left sugar =

```
  435kg 365g
- 214kg 456g
------------
  220kg 909g
```

25. Milk distributed equally among 25 children = 6.25 litre

Thus, each child get the milk =

```
25 ) 6.2 5 ( 0.025
   – 5 0 ↓
     1 2 5
   – 1 2 5
     ×
```

26. Cost of new video game = ₹ 361.43
Cost of old video game = ₹ 36.53
Thus, Cost of both games = 361.43 + 36.53
He spent on both the games = 397.96

Chapter-2 (More About Large Number)

Exercise Time - 2.1

1. Write true and false for following statements.
(a) False (1 crore = 1,00,00,000)
(b) True (c) True (Any number of face value is itself)
(d) False (The success or means 1 plus so its
success is 4353163 + 1 = 4353164)

2. Write the numbers in figures :
(a) 540,000,032 (b) 120,000,036
(c) 840,000,550 (d) 8,020,700,006
(e) 4,060,000,418

3. Write the number name for each of the following, using Indian System of Numeration :
(a) 700000700 → Seventy crore and seven hundred.
(b) 67533321 → Six crore, seventy-five lakh, thirty two thousand three hundred twenty-one.
(c) 10234156 → One crore, two lakh, thirty-four thousand, one hundred fifty-six.
(d) 7235070 → Seventy-two lakh thirty-five thousand and seventy.

4. Write the numerals for each of the following using the Indian system of numeration.
(a) 54016012 (b) 104114030
(c) 16183905 (d) 743300804
(e) 640940955

5. Fill in the blanks :
(a) The greatest seven digit number is **9999999**.
(b) Ten crore can be written as **10,00,00,000**.
(c) The successor of 4939299 is **4939300 (4939299 + 1 = 4939300)**
(d) The predecessor of 8727578 is **8727577 (Predecessor means 1 means so 8727578 – 1** = 8727577)

6. Write the place value of the encircled digits :
(a) 7431**2**00 → 200
(b) 37**8**1432 → 80,000
(c) **2**341680 → 20,00,000
(d) 647**1**327 → 1000
(e) 2**8**90248 → 8,00,000
(f) **6**175673 → 60,00,000

7. Greatest 8-digit number → 99999999
It's successor = 99999999 + 1
= 100000000
It's predecessor = 99999999 – 1
= 99999998

8. Tick (✓) the correct option :
(a) (ii) 100000 (✓)
(b) (iv) one crore (✓)
(c) (ii) 999999999 (✓)
(d) (iii) 475295 (✓)

Exercise Time - 2.2

1. Write the expanded or of the following using the Indian Numeration system :
(a) 7,00,00,000+60,00,000 + 4,00,000 + 30,000 + 3000 + 200 + 10 + 2
(b) 70000000 + 5000000 + 500000 + 80,000 + 8000 + 300 + 20 + 1
(c) 60000000 + 100000 + 10
(d) 200000000 + 20000000 + 1000000

+ 100000 + 20000 + 2000 + 300 + 40 + 4

(e) 600000000 + 10000000 + 400000 + 80000 + 3000 + 200 + 10 + 1

2. Write the following numbers in short form :

(a) 536357943 (b) 585213782

(c) 735284147

3. How many digits are there in each of the following :

(a) 7,05,00,004 → 8 digit

(b) 60,92,000 → 7 digits

(c) 94,03,00,002 → 9-digit

(d) 32,03,00,000 → 9-digit

4. Write the following numbers in expanded form as shown :

(a) 4538750 → 4000000 + 500000 + 30000 + 8000 + 700 + 50 + 1

(b) 67814315 → 60000000 + 70,00,000 + 8,00,000 + 10,000 + 4000 + 300 + 10 + 5

(c) 48656241 → 40000000 + 80,00,000 + 6,00,000 + 50,000 + 6000 + 200 + 40 + 1

(d) 336655744 → 30,0000000 + 30000000 + 60,00000 + 6,00,000 + 50,000 + 6000 + 200 + 40 + 1

(e) 780960809 → 70,0000000 + 80000000 + 900000 + 60,000 + 800 + 9

5. Write the following numbers in short form :

(a) 760042581

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

(b) 85060732

```
  8 0 0 0 0 0 0 0 0
    5 0 0 0 0 0 0 0
          6 0 0 0 0
              7 0 0
+               3 2
  8 5 0 6 0 7 3 2
```

(c) 650434

```
    6 0 0 0 0 0
      5 0 0 0 0
          4 0 0
+           3 4
  6 5 0 4 3 4
```

(d) 987300000

```
  9 0 0 0 0 0 0 0 0
    8 0 0 0 0 0 0 0
      7 0 0 0 0 0 0
      + 3 0 0 0 0 0
  9 8 7 3 0 0 0 0 0
```

(e) 350420706

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

Exercise Time - 2.3

1. Compare the following numbers and put >, < or = in the boxes :

(a) 342607 = 342607

(b) 37544275 > 35177669

(c) 321310 < 332130

(d) 703403 = 703403

(e) 1654011 < 1654101

(f) 1654411 > 1645655

2. **Arrange the following numbers in ascending order :**
   (a) Ascending order = 50000, 35117027, 361136007, 361136026
   (b) Ascending order = 60,000, 71125067, 71126067, 711135070
   (c) Ascending order = 245005, 3245500, 3245607, 3245673
   (d) Ascending order = 3214506, 3565006, 3711113, 3711566
   (e) Ascending order = 1366276, 1376210, 1386211, 13866554
3. **Arrange the following numbers in descending order :**
   (a) Descending order = 111224456, 33266775, 1866666, 1800000
   (b) Descending order = 66432110, 3445678, 1445678, 1121786
   (c) Descending order = 6321765, 6321675, 6312765, 6312675
   (d) Descending order = 70405100, 24865710, 666666, 77777
   (e) Descending order = 2362114, 2361177, 2361114, 2360178
4. **Write the smallest and the greatest numbers using each of the following digits only once :**
   (a) Greatest number → 65430
   Smallest number → 30456
   (b) Greatest number → 754210
   Smallest number → 102457
   (c) Greatest number → 765410
   Smallest number → 104567
   (d) Greatest number → 98774210
   Smallest number → 10247789
   (e) Greatest number → 986543210
   Smallest number → 102345689
5. Do it yourself.
6. One numbers — 2367
   Two greatest numbers — 7,6
7. Smallest numbers = 100234678
   Greatest number = 876432001

Exercise Time - 2.4

1. (a) Smallest number → 12345789
   Greatest number → 98754321
   (b) Smallest number → 20346789
   Greatest number → 98764320
   (c) Smallest number → 20345789
   Greatest number → 98754320
2. (a) Smallest number → 102456789
   Greatest number → 987654210
   (b) Smallest number → 123456789
   Greatest number → 987654325
   (c) Smallest number → 102356789
   Greatest number → 987653210

Chapter-3 (Roman Numbers)

Exercise Time - 3

1. **Write true and false for following statements.**
   (a) False (X, is the use for 10)
   (b) True
2. **Fill in the blanks :**
   (a) There in no Roman numeral for **0**
   (b) In Roman numeral system D means **500**
   (c) In Roman number system **I, X** and **L** are used for addition and subtraction.
3. **Write the Hindu-Arabic Numerals for following Roman Numerals :**
   (a) XIV – 14 (b) XXVI – 26
   (c) LXXV – 75 (d) LXXX – 80
   (e) XCV – 95 (f) XCVII – 97
4. **Write the Roman Numeral for each of the following :**
   (a) 17 – XVII
   (b) 53 – LIII
   (c) 38 – XXXVIII
   (d) 65 – LXV
   (e) 79 – LXXIX
   (f) 97 – XCVII
5. **Write the following in Roman Numerals :**
   (a) Eight-five – LXXXV

(b) Twenty-six – XXVI
(c) Sixty-seven – LXVII
(d) Seventeen – XVII

6. Fill in the blanks with >, < or = signs :

(a) XL [>] 55 (b) XLIII [=] 43
(c) XI [>] 9 (d) XXX [=] 30
(e) XI [=] 11 (f) L × L [>] 103

7. Arrange the following in increasing order :

(a) Increasing order → XX, XXVIII, L, C
(b) Increasing order → IX, XXI, XLI, LXXXI
(c) Increasing order → XX, XL, LXXIII, LXXX
(d) Increasing order → V, X, XL, C

8. Arrange the following in decreasing order :

(a) Decreasing order → CM, CD, XL, XC
(b) Decreasing order → XC, LX, LV, XI
(c) Decreasing order → CX, C, LXXX, XX
(d) Decreasing order → XC, LXXII, XXX, XI

9. Tick (✓) the correct option :

(a) In roman 54 = LIV
so, (iv) LIV
(b) In Roman V is = 5
so, (ii) 5

Chapter-4 (Operations on Large Numbers)

Exercise Time - 4.1

1. Find the sum of the following :

(a)
```
   1     1 1 1
 3 2 5 0 8 3 9
 1 2 4 7 3 4 8
+ 1 2 1 2 5 1
 4 6 1 9 4 3 8
```

(b)
```
         1 1
     2 4 2 5 6
   3 1 4 5 7 1
+5 2 1 1 0 6 7
 5 5 4 9 8 9 4
```

(c)
```
                1
   3 4 5 2 1 1 3 4
4 0 3 0 1 4 3 1 8
+   1 2 2 1 4 1 1
4 3 8 7 5 6 8 6 3
```

(d)
```
1 1 1 1 1 1
    4 2 5 0 7 1
  5 2 3 0 4 0 6
+3 4 5 5 8 2 5
  9 1 1 1 3 0 2
```

2. Arrange in columns and add :

(a)
```
1 1 1 1 1 1 1
2 3 1 5 8 7 7 4
  7 4 6 0 2 8 1
  + 5 7 4 4 3 7
3 1 1 9 3 4 9 2
```

(b)
```
  1     1 1 1
    5 5 6 6 3 4 3
    1 1 1 2 4 2 4
+ 5 1 8 1 6 7 7 0
  5 8 4 9 5 5 3 7
```

(c)
```
  2 1 1 2 1 1
    5 5 5 5 5 5 5
  7 8 7 8 7 8 6 5
    1 0 0 0 0 2 3
+ 7 5 3 1 1 6 5 4
1 6 0 6 5 5 0 9 7
```

(d)

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

3. Replace each * by the correct digit in each of the following :

(a)

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

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

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

4. Find the difference :

(a)

				4	10		
5	7	8	~~5~~	~~0~~	6	1	7
– 2	3	1	1	7	0	0	4
3	4	7	3	3	6	1	3

(b)

5	10	6	14		6	9	14
~~6~~	~~1~~	~~7~~	~~4~~	9	~~7~~	~~0~~	~~4~~
– 4	1	4	6	7	4	9	5
1	9	2	8	2	2	0	9

(c)

						4	12
9	3	5	6	7	9	~~5~~	~~2~~
– 3	3	0	6	0	2	2	9
6	0	5	0	7	7	2	3

(d)

			8	15	13	8	10
4	8	~~9~~	~~6~~	~~3~~	~~9~~	~~0~~	4
– 3	7	4	9	5	7	5	0
1	1	4	6	8	1	5	4

5. Replace each by the correct digit in each of the following :

(a)

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

(b)

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

(c)

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

6. Simplify :

(a)

		8	12	17	13	12	
8	~~9~~	~~3~~	~~8~~	~~4~~	~~2~~	7	9
– 4	2	6	8	6	5	7	2
4	6	6	9	7	7	0	7

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

Hence, 89384279 – 42686572 + 15754754 = 62452461

(b)

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

	8	9	11		
8	~~9~~	~~0~~	~~1~~	4	6
– 6	4	5	3	1	2
2	4	4	8	3	4

Hence, 568574 + 321572 – 645312 = 244834

(c)

			1	13	12	15	
5	7	8	~~2~~	~~4~~	~~3~~	~~5~~	4
– 1	3	2	1	7	4	8	2
4	4	6	0	6	8	7	2

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

Hence 57824354 - 13217482 + 64259081 = 108865953

(d)

	3	13		3	11	11	
8	~~4~~	~~3~~	7	~~4~~	~~2~~	~~1~~	
– 5	3	8	4	3	4	3	
3	0	5	3	0	7	8	

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

Hence, 8437421 - 5384343 + 1205172 = 4258250

(e)

			18	10	12	12	
7	8	6	~~9~~	~~1~~	~~2~~	~~2~~	7
– 1	7	2	9	7	5	6	3
6	1	2	9	3	7	6	4

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

Hence, 78691227 - 17297563 + 2475617 = 63769381

Exercise Time - 4.2

1. Females in a city = 1556308
Children in a city = 1838509
Males in a city = 1734578

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

Hence, total population of the city = 5129395

2. Rajat wrote a story of words = 28514
His friend wrote a story of words = 12156

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

Hence, they wrote together of words = 40670

3. A company had employees in its Delhi Branch = 345715
A company had employees in its Bangaluru = 1256719
A company had employees in its Hyderabad Branch = 1378125

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

Hence, In a company have in all employees = 2980559

4. The difference of two number = 15246517
Smaller numbers = 3524517

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

Thus, the Greatest number = 11722000

5. Greatest 8-digit number = 99999999
Smallest 9-digit number = 1000000000

$$\begin{array}{r} 99999999 \\ +\ 100000000 \\ \hline \boxed{199999999} \end{array}$$

6. Hence the number which is 2521576 less than 8628219 = 6106643

$$\begin{array}{r} 8628219 \\ -\ 2521576 \\ \hline \boxed{6106643} \end{array}$$

7. The sum of two numbers = 8964579
One number = 2358765

$$\begin{array}{r} 8964579 \\ -\ 2358765 \\ \hline \boxed{6605814} \end{array}$$

Hence, the other number = 6605814

8. The predecessor of 5689000 = 5689000 – 1 = 5688999

Exercise Time - 4.3

1. Write true and false for following statements:
(a) True (b) False (c) True (d) False

2. Fill in the blanks :
(a) Divisor (b) Product (c) Parenthesls (d) Bracket

3. Find the product :

(a)
$$\begin{array}{r} 37562 \\ \times\ 526 \\ \hline 225372 \\ 75124\ \times \\ 187810\ \times\ \times \\ \hline \boxed{19757612} \end{array}$$

Hence 37562 × 526 = 19757612

(b)
$$\begin{array}{r} 70518 \\ \times\ 695 \\ \hline 352590 \\ 634662\ \times \\ 423108\ \times\ \times \\ \hline \boxed{49010010} \end{array}$$

Hence, 70518 × 695 = 49010010

(c)
$$\begin{array}{r} 86555 \\ \times\ 407 \\ \hline 605885 \\ 00000\ \times \\ 346220\ \times\ \times \\ \hline \boxed{35227885} \end{array}$$

Hence, 86555 × 407 = 35227885

(d)
$$\begin{array}{r} 3435 \\ \times\ 24 \\ \hline 13740 \\ 6870\ \times \\ \hline \boxed{82440} \end{array}$$

Hence, 3435 × 24 = 82440

(e)
$$\begin{array}{r} 56723 \\ \times\ 32 \\ \hline 113446 \\ 1701690 \\ \hline \boxed{1815136} \end{array}$$

Hence, 56723 × 32 = 1815136

(f)
$$\begin{array}{r} 46520 \\ \times\ 93 \\ \hline 00000 \\ 418680\ \times \\ \hline \boxed{4186800} \end{array}$$

Hence, 46520 × 93 = 4186800

4. Find the quotient and the remainder:

(a)
$$\begin{array}{r|l} 70 & 265000 \quad 3785 \\ & -210 \\ & \quad 550 \\ & -490 \\ & \quad 600 \\ & -560 \\ & \quad 400 \\ & -350 \\ & \quad 50 \end{array}$$

Quotient = 13529, Remainder = 49

(b)
```
25)236145(9445
  -225
    111
   -100
     114
    -100
      145
     -125
       20
```

Quotient = 9445, Remainder = 20

(c)
```
85)1150014(13529
   -85
    300
   -255
     450
    -425
      251
     -170
       814
      -765
        49
```

Quotient = 13529, Remainder = 49

(d)
```
67)64800236(967167
   -603
    450
   -402
     480
    -469
      112
     -67
       453
      -402
        516
       -469
         47
```

Quotient = 967167, Remainder = 47

5. Simplify :

(a) $56 \div 14 \times 6 - 15 + 9$

(b) $120 \div 12 + 28 - 2 \times 14$

$4 \times 6 - 15 + 9$

$10 + 28 - 2 \times 14$

$24 - 15 + 9$

$10 + 28 - 28$

$24 - 24 = 0$

$38 - 28 = 10$

(c) $5\,[28 - 5\,\{7 - (9 - 6)\}]$

$5[28 - 5\,\{7 - 3\}]$

$4 \times 3 + 15 - 8$

$5\,[28 - 5 \times 4]$

$5 \times 8 = 40$

(d) $64 \div 16 \times 3 + 15 - 8$

$12 + 15 - 8$

$5[28 - 20]$

$27 - 8 = 19$

6. Simplify the following :

(a) $30 - \{(15\text{-}3) \div (20 - 8)\}$

$30 - \{12 \div 12\}$

$30 - 1 = 29$

(b) $\{(18 + 17) \div 5\} \div 7$

$30 \div 5 \div 7$

$7 \div 7 = 1$

(c) $20 + (15 + 5)\}$ - 5

$\{20 + 20\}$ - 5

40 - 5 = 35

(d) $\{20 - (24 - 10)\} + 7$

$\{20 - 14\} + 7$

$6 + 7 = 13$

(e) $\{9 + (8 \times 3)\} - 9 + 5$ of 4

$\{9 + 24\} - 9 + 5 \times 4$

$33 - 9 + 20$

$33 - 29 = 4$

(f) $(40 \div 20) + \{(3 \times 8)\} \div 6$

$2 + 24 \div 6$

$2 + 4 = 6$

7. Tick (✓) the correct option :

(a) (ii) Addition

(b) (iv) Multiplication

(c) (i) Multiplication

(d) Quotient

Exercise Time - 4.4

1. Apartments = 54

Each apartments cost = ₹ 625976

So, the cost which the builders is earn by setting all the apartment.

```
      6 2 5 9 7 6
            × 5 4
    ---------------
    2 5 0 3 9 0 4
  3 1 2 9 8 8 0 ×
  [₹ 3 3 8 0 2 7 0 4]
```

2. Rohan save every years = ₹ 14576

Thus, he save in 26 years

```
      1 4 5 7 6
          × 2 6
    ---------------
    8 7 4 5 6
  2 9 1 5 2 ×
  [₹ 3 7 8 9 7 6]
```

3. Costs of a motor-cycle = ₹ 28870

Thus, cost of the motor-cycle sold by dealer

```
      2 8 8 7 0
          × 5 7 6
    ---------------
    0 0 0 0 0
  2 0 2 0 9 0 ×
1 4 4 3 5 0 × ×
  [₹ 1 6 4 5 5 9 0 0]
```

4. Number of copies of a book which publisher printed = 348178

Cost of each book is sold = ₹ 74

Thus, publisher earn the cost

```
      3 4 8 1 7 8
            × 7 4
    ---------------
    1 3 9 2 7 1 2
    2 4 3 7 2 4 6
  [₹ 2 5 7 6 5 1 7 2]
```

5. The product of two numbers = 958048

One of them = 658

Thus, other number

Hence 1456 is the other number

```
658 ) 9 5 8 0 4 8 ( 1456
    - 6 5 8 ↓
      3 0 0 0
    - 2 6 3 2 ↓
        3 6 8 4
      - 3 2 9 0 ↓
          3 9 4 8
        - 3 9 4 8
          0 0 0 0
```

6. A bus can accommodate people = 175

Thus, Number of buses which will be required to transport 50750 people is

Hence 290 buses will be required.

```
175 ) 5 0 7 5 0 ( 290
    - 3 5 0 ↓
      1 5 7 5
    - 1 5 7 5 ↓
      0 0 0 0 0
```

7. Largest 8-digit number = 99999999

Largest 4-digit number = 9999

```
9999 ) 9 9 9 9 9 9 9 9 ( 11
     - 9 9 9 9 ↓ ↓ ↓ ↓
       0 0 0 0 9 9 9 9
             - 9 9 9 9
               0 0 0 0
```

Quotient = 11

8. One year = 365 days, Thus,

Hence, 95 years will make 34675 days.

```
365 ) 3 4 6 7 5 ( 95
    - 3 2 8 5 ↓
        1 8 2 5
      - 1 8 2 5
        0 0 0 0
```

9. Dividend = Divisor × Quotient + remainder = 65 × 875 + 15

= 56875 + 15

= 56890

```
      8 7 5
      × 6 5
    -------
    4 3 7 5
  5 2 5 0 ×
  +-------+
  | 5 6 8 7 5 |
  +-------+
```

10. Number of eggs which produced a poultry farm = 249942

Number of box it packs = 154 eggs

Thus, number of boxes which required to pack all the eggs is

```
154 ) 2 4 9 9 4 2 ( 1623
    – 1 5 4
      -------
        9 5 9
      – 9 2 4
      -------
          3 5 4
        – 3 0 8
        -------
            4 6 2
          – 4 6 2
          -------
                0
```

Hence, 1623 boxes are required to pack all the eggs.

Chapter 5 (Multiples and Factors)

1. Fill in the blanks :

(a) Multiple (b) Odd

(c) Prime, Composite (d) 4

2. Write true and false for following statements:

(a) True (b) False (c) True (d) False

3. Write the factors of following numbers :

Factors of :

(a) 75 = 3, 5 and 15

(b) 60 = 2, 3, 4, 5, 6, 10, 12, 15, 20 and 30

(c) 144 = 2, 3, 4, 6, 8, 9 and 12

(d) 96 = 2, 3, 4, 6, 8 and 12

(e) 16 = 2, 4 and 8

(f) 14 = 2 and 7

(g) 45 = 3, 5, 9 and 15

(h) 25 = 5

4. Write first five multiples of following numbers :

(a) 50 = (50 × 2), (50 × 3), (50 × 4), (50 × 5), (50 × 6)
100, 150, 200, 250, 300

(b) 32 = (32 × 2), (32 × 3), (32 × 4), (32 × 5), (32 × 6)
= 64, 96, 128, 160, 192

(c) 125 = (125 ×2), (125 × 3), (125 × 4), (125 × 5), (125 × 6)
= 250, 375, 500, 625, 750

(d) 75 = (75 × 2), (75 × 3), (75 × 4), (75 × 5), (75 × 6)
= 150, 225, 300, 375, 450

(e) 15 = (15 × 2), (15 × 3), (15 × 4), (15 × 5), (15 × 6)
= 30, 45, 60, 75, 90

(f) 6 = (6 × 2), (6 × 3), (6 × 4), (6 × 5), (6 × 6)
=12, 18, 24, 30, 36

(g) 25 = (25 × 2), (25 × 3), (25 × 4) (25 × 5) (25 × 6)
= 50, 75, 100, 125, 150

(h) 18 = (18 × 2), (18 × 3), (18 × 4), (18 × 5), (18 × 6)
= 36, 54, 72, 90, 108

5. Write the first ten :

(a) Prime numbers – 2, 3, 5, 7, 11, 13, 15, 17, 19, 23

(b) Composite number – 4, 6, 8, 10, 12, 14, 16, 18, 20, 22

(c) Odd composite numbers – 9, 15, 21, 25, 27, 33, 35, 39, 45, 49

6. Select the co-prime numbers from the following pair of numbers :

(a) 23 and 25

Factors of 23 = 1 and 23 Factors of 25 = 1, 5 and 25

There is no common factor other than 1 between 23 and 25. So they are co-prime numbers.

(b) 7 and 21
Factors of 7 = 1 and 7 Factors of 21 = 1, 3, 7 and 21
There is common factor 1 and 7 between 7 and 21. So they are co-prime numbers.

(c) 2 and 65
Factors of 2 = 1 and 2 Factors of 65 = 1, 5 and 65
There is no common factors other than 1 between 2 and 65 i.
So they are co-prime number.

(d) 8 and 72
Factors of 8 = 1, 2, 4 and 8
Factors of 72 = 1, 2, 3, 4, 6, 8, 9 and 72
There is 1, 2, 4, and 8 common factors between 8 and 72. So they are not co-prime factor.

(e) 9 and 14
Factors of 9 = 1, 3 and 9 Factors of 14 = 1, 2, 7 and 14
There is no common factors between 9 and 14 other than 1 between 9 and 14. So they are co-prime numbers.

(f) 13 and 91
Factors of 13 = 1 and 13 Factors of 91 = 1, 7, 13 and 91
There is 1 and 13 common factor between 13 and 91. So they are not co-prime factors.

7. Without actual division, test the divisibility of following numbers :

(a) **By 4 → (Divisibility by 4)** → A number is divisible by 4 if the digits at ones and tens place (last two digit) are divisible by 4 or the number has o at its ones and tens place :
Hence,
(i) **4400** is divisible by 4 because its ones and tens place are 00.
(ii) **16306** is not divisible by 4 because its ones ans tens place are not divisible by 4.
(iii) **44120** is divisible by 4 because its last two digit ones and tens place are divisible by 4.

(b) **By 6 (Divisibility by 6)** — A number is divisible by 6 if it is even and sum of its digits is divisible by 3 or a number both divisible by 2 and 3.
Hence,
(i) **5000** is not divisible by 6 because it is not even and sum of its digits is divisible by 3.
(ii) **6741** is divisible by 6 because it sum of number (6 + 7 + 4 + 1) is divisible by 2 and 3.
(iii) **4098** is divisible by 6 because it one place is even.

(c) **By 8 (Divisible by 8)** — A number is divisible by 8 if the number formed by the digits last three places (hundreds, tens and ones) are zero (000) or is divisible by 8.
Hence,
(i) **45000** is divisible by 8 because its last three places hundreds, tens and ones are 000.
(ii) **320756** is not divisible by 8 because its last three place is not zero or not divisible by 8.
(iii) **41971** is not divisible by 8 because its last three place is not zero or not divisible by 8.

(d) **By 3 and 9 (Divisible by 3 and 9)** – A number is divisible by 3 and 9 if the sum of its divisible by 3 and 9.
Hence,
(i) **9301234** → (9 + 3 + 1 + 2 + 3 + 4) ÷ 3/9 22 ÷ 3/9 so it is not divisible by 3 and 9.
(ii) **924653** → (9 + 2 + 4 + 6 + 5 + 3) ÷ 3/9 29 ÷ 3/9 so it is not

divisible by 3 and 9.

(iii) **40725** → (4 + 0 + 7 + 2 + 5) ÷ 3/9 18 ÷ 3/9 = 6 and 2 so it is divisible by 3 and 9.

(e) **By 11 (Divisible by 11)** → A number is divisible by 11 if the usm of the digits is even places is equal to the sum of the sum of the digits in the old places or the difference of the two sums is divisible by 11.

Hence,

(i) **94897** → Odd = 4 + 9 = 9 even = 9 + 8 + 7 = 24

it is not divisible by 11 because its odd number sum and even number sum is not equal

(ii) **7917624** → Odd = 9 + 7 + 2 = 18 even = 7 + 1 + 6 + 4 = 18

it is divisible by 11 because its odd number sum and even number sum is equal.

(iii) **10818** → Odd = 0 + 1 = 1 even = 1 + 8 + 8 = 17

it is not divisible by 11 because its odd number sum and even number sum is not equal.

8. Do it yourself.

9. Tick (✓) the correct option :

(a) (i) factor (b) (i) 2 and 5

(c) (ii) even number (d) (iv) 2

10. Hence, 4 is subtracted from 40639 to make it exactly divisible by 9.

```
9 ) 4 0 6 3 9 ( 4515
  – 3 6 ↓
      4 6
    – 4 5 ↓
        1 3
      – 9 ↓
          4 9
        – 4 5
            4
```

Chapter-6 (Highest Common Factor and Lowest Common Factor)

Exercise Time - 6.1

1. Find the HCF of the following sets of factors :

(a) 3 × 3 × 5 × 5 and 2 × 3 × 5 × 7
Hence, HCF = 3 × 5 = **15**.

(b) 2 × 2 × 3 and 2 × 3 × 8
Hence, HCF = 2 × 3 = **6**

(c) 2 × 3 × 3 × 5 and 2 × 2 × 7
Hence, HCF = **2**

(d) 3 × 3 × 7 × 11 and 2 × 5 × 5 × 7
Hence, HCF = **7**

2. Fill in the blanks :

(a) The product of HCF and LCM of 8 and 12 is **96** (∴ 8 × 12 = 96)

(b) The highest common factor is also known as **Greatest Common Divisor**.

(c) The largest common factor of two or more numbers is their **HCF**. (Highest common factor)

3. Write the common factors of :

(a) Common factors of 120, 160 = 10

(b) Common factors of 48, 96 = 12

(c) Common factors of 30, 60 = 10

(d) Common factors of 25, 50 = 5

(e) Common factors of 15, 25 = 5

(f) Common factors of 154, 198 = 22

4. Find the HCF using primes factorisa -tion method :

(a) 16 and 34

Prime factors of 16

2	16
2	8
2	4
2	2
	1

Prime factors of 34

2	34
17	17
	1

16 = 2 × 2 × 2 × 2

34 = 2 × 17

Thus, the HCF of 16 and 34 = 2

(b) 20 and 35

Prime factors of 20

2	20
2	10
5	5
	1

Prime factors of 35

5	35
7	7
	1

$20 = 2 \times 2 \times 5$

$35 = 5 \times 7$

Thus, HCF of 20 and 35 = 5

(c) Prime factors of 225

Prime factors of 225

3	225
3	75
5	25
5	5
	1

Prime factors of 270

2	270
3	135
3	45
3	15
5	5
	1

Prime factors of 315

3	315
3	15
5	5
	1

$225 = 3 \times 3 \times 5 \times 5$

$270 = 2 \times 3 \times 3 \times 3 \times 5$

$315 = 3 \times 3 \times 5$

Thus HCF of 225, 270 and 315

$= 3 \times 3 \times 5 = 45$

(d) Prime factors of 56 and 98

Prime factors of 56

2	56
2	28
2	14
7	7
	1

Prime factors of 98

2	98
7	49
7	7
	1

$56 = 2 \times 2 \times 2 \times 7$

$98 = 2 \times 7 \times 7$

Thus, HCF of 56 and 98

$= 2 \times 7 = 14$

(e) Prime factors of 75 and 125

Prime factors of 75

3	75
5	25
5	5
	1

Prime factors of 125

5	125
5	25
5	5
	1

$75 = 3 \times 5 \times 5$

$125 = 5 \times 5 \times 5$

Thus, HCF of 75 and 125 = $5 \times 5 =$ 25

(f) Prime factors of 60 and 225

Prime factors of 60

2	60
2	30
3	15
5	5
	1

Prime factors of 225

3	225
3	75
5	25
5	5
	1

$60 = 2 \times 2 \times 3 \times 5$

$225 = 3 \times 3 \times 5 \times 5$

Thus, HCF of 60 and 225 = 3×5 = 15

5. Tick (✓) the correct option :

(a) Full for of GCD is **great common divisor**.

(b) The HCF of 12, 24 and 36 is **12**.

Let us first take smaller numbers and find their HCF

```
12)24(2      12)36(3
  -24          -36
   00           00
```

Therefore the HCF of 12, 24 and 36 = 12.

(c) HCF of 252 and 540 is 36.

```
252)540(2
    -504
     36)254(7
        -252
         000
```

Exercise Time - 6.2

1. Fill in the blanks :

(a) The HCF of two number = 4
Their LCM = 24, One of them = 8

Other number is = $\frac{\text{HCF} \times \text{LCM}}{\text{One number}}$

$= \frac{4 \times 24}{8} = \frac{96}{8} =$ **12**

(b) Product of two numbers = HCF × LCM = 15 × 25 = **375**

(c) Product of (two numbers) HCF and LCM = HCF × LCM
= 8 × 12 = **96**

2. Find the LCM of the following numbers by prime factorisation :

(a)

2	12, 16, 18
2	6, 8, 9
2	3, 4, 9
2	3, 2, 9
3	3, 1, 9
3	1, 1, 3
	1, 1, 1

LCM = 2 × 2 × 2 × 2 × 3 × 3
= 16 × 9 = 144

(b)

2	20, 30, 40
2	10, 15, 20
2	5, 15, 10
3	5, 15, 5
5	5, 5, 5
	1, 1, 1

LCM = 2 × 2 × 2 × 3 × 5
= 24 × 5 = 120

(c)

2	64, 80
2	32, 40
2	16, 20
2	8, 10
2	4, 5
2	2, 5
5	1, 5
	1, 1

LCM = 2 × 2 × 2 × 2 × 2 × 2 × 5
= 64 × 5 = 320

(d)

2	24, 36
2	12, 18
2	6, 9
3	3, 9
3	1, 3
	1, 1

LCM = 2 × 2 × 2 × 3 × 3
= 24 × 3 = 72

(e)

2	54, 99, 144
2	27, 99, 72
2	27, 99, 36
2	27, 99, 18
3	27, 99, 9
3	9, 33, 3
11	3, 11, 1
	1, 11, 1

LCM = 2 × 2 × 2 × 2 × 3 × 3 × 3 × 11
= 48 × 99 = 4752

(f)

2	48, 72, 96
2	24, 36, 48
2	12, 18, 24
2	6, 9, 12
2	3, 9, 6
3	3, 9, 3
3	1, 3, 1
	1, 1, 1

LCM = 2 × 2 × 2 × 2 × 2 × 3 × 3
= 32 × 9 = 288

(g)

2	25, 30, 35, 40
2	25, 15, 35, 20
2	25, 15, 35, 10
3	25, 15, 35, 5
5	25, 5, 35, 5
5	5, 1, 7, 1
7	1, 1, 7, 1
	1, 1, 1, 1

LCM = 2 × 2 × 2 × 3 × 5 × 5 × 7
= 120 × 35
= 4200

(h)

2	288, 96, 192
2	144, 48, 96
2	72, 24, 48
2	36, 72, 24
2	18, 6, 12
2	9, 3, 6
3	9, 3, 3
3	3, 1, 1
	1, 1, 1

LCM = 2 × 2 × 2 × 2 × 2 × 2 × 3 × 3
= 64 × 9
= 576

3. Find the LCM of the following set of factors :

(a) 3 × 3 × 5 and 3 × 3 × 7
LCM = 3 × 3 × 5 × 7
= 45 × 7 = **315**

(b) 3 × 2 and 3 × 5

(c) 3 × 7 × 7 and 2 × 3 ×7
LCM = 3 × 2 × 5 = **30**
LCM = 2 × 3 × 7 = **42**

(d) 2 × 3 × 3 and 2 × 7
LCM = 2 × 3 × 3 × 7
= 18 × 7 = **126**

(e) 3 × 3 × 11 and 2 × 3 × 3 × 5
LCM = 2 × 3 × 3 × 5 × 11
= 90 × 11 = **990**

(f) 2 × 2 × 5 and 2 × 3 × 5
LCM = 2 × 2 × 3 × 5 = **60**

4. HCF × LCM = First number × Second number 744 × LCM
= 2232 × 2976

$$\text{LCM} = \frac{{}^{3}2232 \times 2976}{744}$$

= 3 × 2976 = **8928**

5. HCM × LCM = first number × second number 9 × 54 = 27 × second number (other number)

$$\text{Second/other number} = \frac{486}{27} = \mathbf{18}$$

6. Find the LCM by long division method :

(a) 30, 36, 46

2	30, 36, 46
2	15, 18, 23
3	15, 9, 23
3	5, 3, 23
5	5, 1, 23
23	1, 1, 23
	1, 1, 1

Thus, the LCM of 30, 36 and 46
2 × 2 × 3 × 3 × 5 × 23 = 180 × 23 = **4140**

(b) 56, 84, 160

2	56, 84, 160
2	28, 42, 80
2	14, 21, 40
2	7, 21, 10
2	7, 21, 10
3	7, 21, 5
5	7, 7, 5
7	7, 7, 1
	1, 1, 1

Thus, the LCM of 56, 84 and 160
2 × 2 × 2 × 2 × 2 × 3 × 5 × 7
= 96 × 35 = **3360**

(c) 24, 36, 48

2	24, 36, 48
2	12, 18, 24
2	6, 9, 12
2	3, 9, 6
3	3, 9, 3
3	1, 3, 1
	1, 1, 1

Thus, the LCM of 24, 36 and 48
2 × 2 × 2 × 2 × 3 × 3 = 16 × 9
= **144**

(d) 32, 40, 24

2	32, 40, 24
2	16, 20, 12
2	8, 10, 6
2	4, 5, 3
2	2, 5, 3
3	1, 5, 3
5	1, 5, 1
	1, 1, 1

Thus, the LCM of 32, 40 and 24

$2 \times 2 \times 2 \times 2 \times 2 \times 3 \times 5 = 96 \times 5$

$= \mathbf{430}$

(e) 45, 50, 90

2	45, 50, 90
3	45, 25, 45
3	15, 25, 15
5	5, 25, 5
5	1, 5, 1
	1, 1, 1

Thus, the LCM of 45, 50 and 90

$2 \times 3 \times 3 \times 5 \times 5 = 18 \times 25$

$= \mathbf{450}$

(f) 60, 108, 96

2	60, 108, 96
2	30, 54, 48
2	15, 27, 24
2	15, 27, 12
2	15, 27, 6
3	15, 27, 3
3	5, 9, 1
3	5, 3, 1
5	5, 3, 1
	1, 1, 1

Thus, the LCM of 60, 108 and 96

$2 \times 2 \times 2 \times 2 \times 2 \times 3 \times 3 \times 3 \times 5$

$= 32 \times 27 \times 5$

$= 32 \times 135$

$= \mathbf{4320}$

(g) 360, 432, 168

2	360, 432, 168
2	180, 216, 84
2	90, 18, 42
3	45, 9, 21
3	15, 3, 7
5	5, 1, 7
7	1, 1, 7
	1, 1, 1

Thus, the LCM of 360, 432, 168

$2 \times 2 \times 2 \times 3 \times 3 \times 5 \times 7$

$= 8 \times 9 \times 35$

$= 72 \times 35 = \mathbf{2520}$

(h) 480, 960, 720

2	480, 960, 720
2	240, 480, 360
2	120, 240, 180
2	60, 120, 90
2	30, 60, 45
2	15, 30, 45
3	15, 15, 45
3	5, 5, 15
5	5, 5, 5
	1, 1, 1

Thus, the LCM of 480, 960, 720

$2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 3 \times 3 \times 5$

$= 64 \times 9 \times 5$

$= 64 \times 45 = \mathbf{2880}$

7. Do it yourself.

Chapter-7 (Multiplication and Division of Fractions)

Exercise Time - 7.1

1. Write three equivalent fraction for each of the following :

(a) $\frac{6}{7} = \frac{6 \times 2}{7 \times 2} = \frac{6 \times 3}{7 \times 3} = \frac{6 \times 4}{7 \times 4} \Rightarrow \frac{12}{14}$

$= \frac{18}{21} = \frac{24}{28}$

(b) $\frac{4}{5} = \frac{4 \times 2}{5 \times 2} = \frac{4 \times 3}{5 \times 3} = \frac{4 \times 4}{5 \times 4} \Rightarrow \frac{8}{10}$

$= \frac{12}{15} = \frac{16}{20}$

(c) $\frac{24}{120} = \frac{24 \times 2}{120 \times 2} = \frac{24 \times 3}{120 \times 3} = \frac{24 \times 4}{120 \times 4}$

$\Rightarrow \frac{48}{240} = \frac{72}{360} = \frac{96}{480}$

$= \frac{4}{20} = \frac{6}{30} = \frac{8}{40} = \frac{4}{20} = \frac{2}{10} = \frac{1}{5}$

(d) $\frac{27}{108} = \frac{27 \times 2}{108 \times 2} = \frac{27 \times 3}{108 \times 3} = \frac{27 \times 4}{108 \times 4}$

$\Rightarrow \frac{54}{216} = \frac{81}{324} = \frac{108}{432}$

(e) $\frac{1}{4} = \frac{1 \times 2}{4 \times 2} = \frac{1 \times 3}{4 \times 3} = \frac{1 \times 4}{4 \times 4}$

$\Rightarrow \frac{2}{8} = \frac{3}{12} = \frac{4}{16}$

(f) $\frac{5}{6} = \frac{6 \times 2}{6 \times 2} = \frac{5 \times 3}{6 \times 3} = \frac{5 \times 4}{6 \times 4}$

$\Rightarrow \frac{10}{12} = \frac{15}{18} = \frac{20}{24}$

2. Fill correct equivalent in the following blanks :

(a) $\frac{21}{24} = \frac{3 \times 7}{3 \times 8}$ $\quad \therefore \frac{21}{24} = \frac{7}{[8]}$

(b) $\frac{8 \times 5}{9 \times 5} = \frac{40}{45}$ $\quad \therefore \frac{8}{9} = \frac{40}{[45]}$

(c) $\frac{3 \times 5}{12 \times 5} = \frac{15}{60}$ $\quad \therefore \frac{[3]}{12} = \frac{15}{60}$

(d) $\frac{12}{15} = \frac{12 \times 3}{15 \times 3}$ $\quad \therefore \frac{12}{15} = \frac{[36]}{45}$

(e) $\frac{4}{5} = \frac{4 \times 6}{5 \times 6}$ $\quad \therefore \frac{4}{5} = \frac{[14]}{30}$

(f) $\frac{9 \times 1}{9 \times 2} = \frac{1}{2}$ $\quad \therefore \frac{[9]}{18} = \frac{1}{2}$

3. Circle the proper fraction :

$\frac{6}{5}, \frac{1}{3}, \frac{30}{35}, \frac{2}{4}, \frac{1}{8}, \frac{110}{132}, \frac{19}{14}$

(When the numerator is smaller than denominator then the fraction is proper fraction)

4. Reduce the following fraction into the lowest form :

(a) $\frac{21}{14} = \frac{21 \div 7}{14 \div 7} = \frac{3}{2}$

(b) $\frac{52}{39} = \frac{52 \div 13}{39 \div 13} = \frac{4}{3}$

(c) $\frac{16}{40} = \frac{16 \div 8}{40 \div 8} = \frac{2}{5}$

(d) $\frac{20}{35} = \frac{20 \div 5}{35 \div 5} = \frac{4}{7}$

(e) $\frac{35}{75} = \frac{35 \div 5}{75 \div 5} = \frac{7}{15}$

(f) $\frac{15}{35} = \frac{15 \div 5}{35 \div 5} = \frac{3}{7}$

5. Express each of the following as a mixed fraction :

(a) We can change $\frac{120}{10}$ into mixed fraction by dividing 120 by 10.

```
10 ) 1 2 0 ( 12
     - 1 0 ↓
       2 0
     - 2 0
       0 0
```

Thus, $\frac{120}{10}$ will be written into mixed fraction as $12\frac{0}{10}$.

(b) We can change $\frac{103}{8}$ into mixed fraction by dividing 103 by 8.

```
8 ) 1 0 3 ( 12
    - 8 ↓ ↓
      2 3
    - 1 6
        7
```

Thus, $\frac{103}{8}$ will be written into mixed fraction as $12\frac{7}{8}$.

(c) We can change $\frac{95}{8}$ into mixed fraction dividing 95 by 8.

Thus, $\frac{95}{8}$ will be written into mixed fraction as $11\frac{7}{8}$.

(d) We can change $\frac{20}{9}$, into mixed fraction dividing 20 by 9.

$$\begin{array}{r|l} 9 & 20 \quad (2 \\ & -18 \\ & \quad 2 \end{array}$$

Thus, $\frac{20}{9}$ will be written as into mixed fraction as $2\frac{2}{9}$.

(e) We can change $\frac{11}{5}$ into mixed fraction dividing 11 by 5.

$$\begin{array}{r|l} 5 & 11 \quad (1 \\ & -5 \\ & \quad 6 \end{array}$$

Thus, $\frac{11}{15}$ will be written into mixed fraction as $1\frac{6}{5}$.

(f) We can change $\frac{156}{13}$ into mixed fraction dividing 156 by 13.

$$\begin{array}{r|l} 13 & 156 \quad (12 \\ & -13\downarrow \\ & \quad 26 \\ & \quad -26 \\ & \quad 00 \end{array}$$

Thus, $\frac{156}{13}$ will be written into mixed fraction as $12\frac{0}{13}$.

6. Express as improper fraction :

(a) $5\frac{3}{7} = \frac{5 \times 7 + 3}{7} = \frac{38}{7}$

(b) $4\frac{2}{3} = \frac{4 \times 3 + 2}{3} = \frac{14}{3}$

(c) $8\frac{7}{10} = \frac{8 \times 10 + 7}{10} = \frac{87}{10}$

(d) $4\frac{1}{9} = \frac{4 \times 9 + 1}{9} = \frac{37}{9}$

(e) $5\frac{5}{11} = \frac{5 \times 1 + 5}{11} = \frac{60}{11}$

(f) $6\frac{1}{5} = \frac{6 \times 5 + 1}{5} = \frac{31}{5}$

7. Arrange the following in ascending and descending order :

(a) Ascending order $\rightarrow \frac{1}{4}, \frac{3}{5}, \frac{5}{6}, \frac{7}{13}$

Descending order $\rightarrow \frac{7}{13}, \frac{5}{5}, \frac{3}{5}, \frac{1}{4}$

(b) Ascending order $\rightarrow \frac{1}{2}, \frac{1}{3}, \frac{2}{5}, \frac{12}{21}$

Descending order $\rightarrow \frac{12}{21}, \frac{2}{5}, \frac{1}{3}, \frac{1}{2}$

(c) Ascending order $\rightarrow \frac{1}{7}, \frac{3}{8}, \frac{5}{7}$

Descending order $\rightarrow \frac{5}{7}, \frac{3}{8}, \frac{1}{7}$.

8. Find the sum of the following, write the answer in the lowest term.

(a) $\frac{3}{9} + \frac{12}{36} = \frac{(3 \times 36) + (9 \times 12)}{9 \times 36}$

$= \frac{108 + 108}{324}$

$= \frac{216}{324} = \frac{216 \div 2}{324 \div 2} = \frac{18}{162} = \frac{18 \div 2}{162 \div 2}$

$= \frac{9}{81} = \frac{9 \div 9}{81 - 9} = \frac{9}{9}$

(b) $\frac{2}{12} + \frac{3}{6} = \frac{(2 \times 6) + (3 \times 12)}{12 \times 6}$

$= \frac{12 + 36}{72} = \frac{48}{72} = \frac{48 \div 12}{72 \div 12} = \frac{4}{6}$

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

(c) $2\frac{5}{6} + 1\frac{6}{3}$

$$= \frac{2 \times 6 + 5}{6} + \frac{1 \times 3 + 6}{3} = \frac{17}{6} + \frac{9}{3}$$

$$= \frac{17 \times 3 + 9 \times 6}{6 \times 3} = \frac{51 + 54}{18}$$

$$= \frac{105}{18} = \frac{105 \div 3}{18 \div 3} = \frac{35}{6} \text{ or } 5\frac{5}{6}$$

(d) $5\frac{6}{4} + 3\frac{18}{22}$

$$= \frac{5 \times 4 + 6}{4} + \frac{3 \times 22 + 18}{22}$$

$$= \frac{26}{4} + \frac{66 + 18}{22} = \frac{26}{4} + \frac{84}{22}$$

$$= \frac{(26 \times 22) + (84 \times 4)}{4 \times 2}$$

$$= \frac{572 + 336}{88} = \frac{908}{88}$$

$$= \frac{908}{88} = \frac{908 \div 2}{88 \div 2} = \frac{459}{44} \text{ or } 1\frac{19}{44}$$

(e) $\frac{4}{5} + \frac{2}{3} + \frac{1}{9} \quad = \left(\frac{4}{5} + \frac{2}{3}\right) + \frac{1}{9}$

$$= \left(\frac{(4 \times 3) + (5 \times 2}{5 \times 3}\right) + \frac{1}{9}$$

$$= \left(\frac{12 + 10}{15}\right) + \frac{1}{9}$$

$$= \frac{22}{15} + \frac{1}{9} \quad = \frac{(22 \times 9) + (1 \times 15)}{15 \times 9}$$

$$= \frac{198 + 15}{135} = \frac{213}{135} = \frac{213 \div 3}{135 \div 3} = \frac{71}{45}$$

(e) $\frac{11}{15} + \frac{4}{45} = \frac{11 \times 3}{15 \times 3} + \frac{4}{45}$

$$\frac{33}{45} + \frac{4}{45} = \frac{33 + 4}{45} = \frac{37}{45}$$

9. Subtract the following fractions and write the answer in the lowest terms:

(a) $5\frac{3}{4} - 2\frac{5}{6} = (5 - 2)\left(\frac{3}{4} - \frac{5}{6}\right)$

$$= (3)\left(\frac{(4 \times 5) - (4 \times 6)}{4 \; kt \; 6}\right)$$

$$= (3)\left(\frac{20 - 18}{24}\right)$$

$$= (3)\left(\frac{2}{24}\right) = 3\left(\frac{2 \div 2}{24 \div 2}\right) = 3\frac{1}{12}$$

(b) $4\frac{5}{8} - 2\frac{1}{2}$

$$= (4 - 2)\left(\frac{5}{8} - \frac{1}{2}\right)$$

$$= (2)\left(\frac{(5 \times 2) - (8 \times 1)}{8 \times 2}\right)$$

$$= (2)\left(\frac{10 - 8}{16}\right) = (2)\left(\frac{2}{16}\right) = 2\frac{1}{8}$$

(c) $17\frac{4}{2} - 6\frac{1}{2}$

$$(17 - 6)\left(\frac{4}{2} - \frac{1}{2}\right)$$

$$= 11\left(\frac{4 - 1}{2}\right) = 11\frac{3}{2}$$

(d) $\frac{3}{4} - \frac{1}{6}$

$$= \frac{(3 \times 8) - (4 \times 1)}{4 \times 6} = \frac{24 - 4}{24} = \frac{20}{24}$$

$$= \frac{20 \div 4}{24 \div 4} = \frac{5}{6}$$

(e) $\frac{11}{12} - \frac{1}{3}$

$$= \frac{(11 \times 3) - (12 \times 1)}{12 \times 3} \quad = \frac{33 - 12}{36}$$

$$= \frac{21}{36} = \frac{21 \div 3}{36 \div 3} = \frac{7}{12}$$

(f) $\frac{7}{2} - \frac{2}{3} = \frac{(7 \times 3) - (2 \times 2)}{2 \times 3} = \frac{21 - 4}{6}$

$$= \frac{17}{6}$$

Exercise Time - 7.2

1. Multiply :

(a) $\frac{1}{7} \times \frac{2}{9} = \frac{1 \times 2}{7 \times 9} = \frac{2}{63}$

(b) $\frac{6}{25} \times \frac{5}{3} = \frac{6 \times 5}{25 \times 3} = \frac{30}{75} = \frac{30 \div 15}{75 \div 15}$

$= \frac{2}{5}$

(c) $\frac{5}{14} \times \frac{6}{10} = \frac{5 \times 6}{14 \times 10} = \frac{30}{140} = \frac{30 \div 5}{140 \div 5}$

$= \frac{6}{28} = \frac{6 \div 2}{28} = \frac{3}{14}$

(d) $\frac{7}{14} \times \frac{1}{2} = \frac{7 \times 1}{14 \times 2} = \frac{7}{28}$

$= \frac{7 \div 7}{28 \div 7} = \frac{1}{4}$

(e) $\frac{14}{16} \times \frac{5}{14} = \frac{14 \times 5}{16 \times 14} = \frac{70}{224}$

$= \frac{70 \div 2}{224 \div 2} = \frac{35}{112} = \frac{35 \div 7}{112 \div 7} = \frac{5}{16}$

(f) $\frac{12}{36} \times \frac{6}{24} = \frac{12 \times 6}{36 \times 24} = \frac{72}{864}$

$= \frac{72 \div 12}{864} = \frac{6}{72} = \frac{6 \div 3}{72 \div 3} = \frac{2}{24}$

$= \frac{2 \div 2}{24 \div 2} = \frac{1}{12}$

(g) $\frac{1}{15} \times \frac{30}{50} = \frac{1 \times 30}{15 \times 50} = \frac{30}{750}$

$= \frac{1 \div 3}{75 \div 3} = \frac{1}{25}$

(h) $\frac{2}{6} \times \frac{1}{9} = \frac{2 \times 1}{6 \times 9} = \frac{2}{54} = \frac{2 \div 2}{54 \div 2} = \frac{1}{27}$

2. Find the product :

(a) $\frac{3}{5} \times 2 = \frac{6}{5}$

(b) $\frac{8}{9} \times 3 = \frac{24}{9} = \frac{24 \div 3}{9 \div 3} = \frac{8}{3}$

(c) $\frac{6}{11} \times 5 = \frac{6 \times 5}{11} = \frac{30}{11}$

(d) $\frac{2}{7} \times 8 = \frac{2 \times 8}{7} = \frac{16}{7}$

(e) $\frac{1}{5} \times 2 = \frac{1 \times 2}{5} = \frac{2}{5}$

(f) $\frac{5}{8} \times 2 = \frac{5 \times 2}{8} = \frac{10}{8} = \frac{10 \div 2}{8 \div 2} = \frac{5}{4}$

(g) $\frac{2}{7} \times 3 = \frac{2 \times 3}{7} = \frac{6}{7}$

(h) $\frac{2}{9} \times 5 = \frac{2 \times 5}{9} = \frac{10}{9}$

3. Multiply and write in the lowest form :

(a) $6\frac{3}{2} \times 2 = \frac{(6 \times 2 + 3) \times 2}{2} = \frac{15 \times 2}{2}$

$= \frac{30}{2}$ or $14\frac{2}{2}$

(b) $1\frac{2}{8} \times 5 = \frac{(8 \times 1 + 2) \times 5}{8} = \frac{10 \times 5}{8}$

$= \frac{50}{8}$ or $6\frac{2}{8}$

$$\begin{array}{r} 8\overline{)50}\,(6 \\ -48 \\ \hline 2 \end{array}$$

(c) $2\frac{5}{4} \times 3 = \frac{(2 \times 4 + 5) \times 3}{4} = \frac{13 \times 3}{4}$

$= \frac{39}{4}$ or $9\frac{3}{4}$

$$\begin{array}{r} 4\overline{)39}\,(9 \\ -36 \\ \hline 3 \end{array}$$

(d) $2\frac{1}{5} \times 4 = \frac{(2 \times 5 + 1) \times 4}{5} = \frac{11 \times 4}{5}$

$= \frac{44}{5}$ or $8\frac{4}{5}$

$$\begin{array}{r} 5\overline{)44}\,(8 \\ -40 \\ \hline 4 \end{array}$$

(e) $2\frac{1}{5} \times 3\frac{1}{4}$

$= \left(\frac{2 \times 5 + 1}{5}\right) \times \left(\frac{3 \times 4 + 1}{4}\right)$

$= \frac{11}{5} \times \frac{13}{4} = \frac{11 \times 13}{5 \times 4} = \frac{143}{20} = 7\frac{3}{20}$

$$20\overline{)143}\,(7$$
$$\underline{-140}$$
$$3$$

(f) $2\frac{6}{5} \times 2\frac{6}{2}$

$= \left(\frac{2 \times 5 + 6}{5}\right) \times \left(\frac{2 \times 2 + 6}{2}\right)$

$= \frac{16}{5} \times \frac{10}{2} = \frac{16 \times 10}{5 \times 2} = \frac{160}{10} = 16$

$$10\overline{)160}\,(16$$
$$\underline{-10\downarrow}$$
$$60$$
$$\underline{-60}$$
$$00$$

(g) $2\frac{3}{5} \times 3\frac{6}{9}$

$= \left(\frac{2 \times 5 + 3}{5}\right) \times \left(\frac{3 \times 9 + 6}{9}\right)$

$= \left(\frac{10 + 3}{5}\right) \times \left(\frac{27 + 6}{9}\right)$

$= \frac{13}{5} \times \frac{33}{9} = \frac{13 \times 33}{5 \times 9} = \frac{429}{45} = 9\frac{24}{45}$

$$45\overline{)429}\,(9$$
$$\underline{-405}$$
$$24$$

(h) $3\frac{1}{4} \times 1\frac{3}{5}$

$= \left(\frac{3 \times 4 + 1}{4}\right) \times \left(\frac{1 \times 5 + 3}{5}\right)$

$= \frac{13}{4} \times \frac{8}{5} = \frac{13 \times 8}{4 \times 5} = \frac{104}{20} = 5\frac{4}{20}$

$$20\overline{)104}\,(5$$
$$\underline{-100}$$
$$4$$

(i) $2\frac{5}{8} \times 2\frac{1}{4}$

$= \frac{(2 \times 8 + 5)}{8} \times \frac{(2 \times 4 + 1)}{4}$

$= \frac{21}{8} \times \frac{9}{4} = \frac{21 \times 9}{8 \times 4} = \frac{189}{32} = 5\frac{39}{32}$

$$32\overline{)189}\,(5$$
$$\underline{-160}$$
$$29$$

(j) $1\frac{3}{5} \times \frac{2}{4} = \frac{5 \times 1 + 3}{5} \times \frac{2}{4} = \frac{8}{5} \times \frac{2}{4}$

$= \frac{8 \times 2}{5 \times 4} = \frac{16}{20} = \frac{16 \div 4}{20 \div 4} = \frac{4}{5}$

$$32\overline{)242}\,(7$$
$$\underline{-224}$$
$$18$$

(k) $2\frac{6}{8} \times 2\frac{3}{4}$

$= \frac{2 \times 8 + 6}{8} \times \frac{2 \times 4 + 3}{4} = \frac{22}{8} \times \frac{11}{4}$

$= \frac{22 \times 11}{8 \times 4} = \frac{242}{32} = 7\frac{18}{32}$

$$12\overline{)19}\,(1$$
$$\underline{-12}$$
$$7$$

(l) $6\frac{1}{3} \times \frac{1}{4} = \frac{6 \times 3 + 1}{3} \times \frac{1}{4} = \frac{19}{3} \times \frac{1}{4}$

$= \frac{19 \times 1}{3 \times 4} = \frac{19}{12} = 1\frac{7}{12}$

$$7\overline{)522}\,(74$$
$$\underline{-49\downarrow}$$
$$32$$
$$\underline{-28}$$
$$4$$

4. Simplify :

(a) 29 of $9\frac{2}{7}$ $\quad 29 \times 9\frac{2}{7}$

$= 261 \times \frac{2}{7} = \frac{261 \times 2}{7} = \frac{522}{7} = 74\frac{4}{7}$

(b) $\frac{2}{4}$ of $6 = \frac{2}{4} \times 6 = \frac{2 \times 6}{4} = \frac{12}{4} = 3$

(c) $\frac{3}{6}$ of $12 = \frac{3}{6} \times 12 = \frac{3 \times 12}{6} = \frac{36}{6} = 6$

(d) 8 of $\frac{5}{24} = 8 \times \frac{5}{24} = \frac{8 \times 5}{24} = \frac{40}{24}$

$= \frac{40 \div 8}{24 \div 8} = \frac{5}{3}$

Exercise Time - 7.3

1. Write the reciprocal of :

(a) $\frac{6}{7} = \frac{7}{6}$ (b) $\frac{3}{6} = \frac{6}{3}$ (c) $\frac{13}{7} = \frac{7}{13}$

(d) $\frac{10}{9} = \frac{9}{10}$ (e) $\frac{7}{8} = \frac{8}{7}$ (f) $\frac{1}{4} = \frac{4}{1} = 4$

2. Write the multiplicative inverse of the following :

(a) $12 = \frac{1}{2}$ (b) $40 = \frac{1}{40}$ (c) $\frac{3}{8} = \frac{8}{3}$

(d) $\frac{1}{6} = \frac{6}{1} = 6$ (e) $\frac{23}{8} = \frac{8}{23}$ (f) $\frac{14}{9} = \frac{9}{14}$

3. Using properties of multiplication, fill in the blanks :

(a) $7 \times \frac{1}{5} = \frac{1}{5} \times 7$ (b) $4 \times \frac{1}{6} = \frac{1}{6} \times 4$

(c) $\left(\frac{1}{3} \times \frac{1}{2}\right) \times \frac{1}{5} = \frac{1}{3} \times \left(\frac{1}{2} \times \frac{1}{5}\right)$

(d) $1 \times 2\frac{3}{4} = 2\frac{3}{4}$

(e) $\frac{1}{5} \times 0 = \frac{0}{5}$ (f) $\frac{3}{4} \times \frac{5}{7} = \frac{5}{7} \times \frac{3}{4}$

(g) $\left(\frac{2}{7} \times \frac{5}{13}\right) \times \frac{4}{11} = \frac{5}{13} \times \left(\frac{2}{7} \times \frac{4}{11}\right)$

(h) $\left(\frac{2}{5} \times \frac{3}{7}\right) \times \frac{4}{9} = \frac{2}{5} \times \left(\frac{3}{7} \times \frac{4}{9}\right)$

Exercise Time - 7.4

1. The cost of a watch $= ₹\, 6\frac{12}{15}$

$= \frac{(15 \times 6 + 12)}{15} = \frac{102}{15}$

Thus, the cost of 25 watches

$= \frac{102}{15} \times 25 = \frac{102 \times 25}{15} = \frac{2550}{15} = ₹\, 110$

2. A story book pages = 145

If Sonali read one-fifty of the book

Thus, she read $= \frac{1}{5} \times 145 = \frac{145}{5}$

= 29 pages.

3. $191 \times \frac{5}{8} = \frac{955}{8} = 119.375$

```
8 ) 9 5 5 ( 119.375
   - 8
     1 5
     - 8
       7 5
     - 7 2
         3 0
       - 2 4
           6 0
         - 5 6
           4 0
         - 4 0
           0 0
```

4. Ribbon $= \frac{2}{5}$ m

Savita use ribbon $= \frac{1}{2}$ m

Thus, $\frac{2}{5} \times \frac{1}{2} = \frac{2}{10} = \frac{1}{5}$m

5. One day consumption of milk $= 4\frac{2}{6}$

$= \frac{26}{6} l$

One month = 30

So, $\frac{26}{6} \times 30 = 26 \times 5 = 130$ lt. m

6. Cost of one kg mangoes $= 24\frac{2}{5}$

$= \frac{120 + 2}{5} = \frac{122}{5}$

Thus, cost of $3\frac{1}{4}$ or $\frac{13}{4}$kg mangoes

$= \frac{122}{5} \times \frac{13}{4} = \frac{122 \times 13}{20} = \frac{1586}{20} = 79.3$

7. Shivangi bought flour $= \frac{5}{7}$ kg

She use flour = $\frac{2}{5}$ of it

Thus, she use the flour, = $\frac{5}{7} \times \frac{2}{5}$

$= \frac{10}{35} = \frac{2}{7}$

8. Number of residents who liked the Music channel = $828 \times \frac{1}{4} = \frac{828}{4} = 27$

9. A quire of a paper weight = $6\frac{2}{5} = \frac{32}{5}$ kg

The one ream = $\frac{32}{5} \times 20$

(1 ream = 20 quire)

= 32 × 4 = 128 quire

10. Distance around a park = $3\frac{1}{5} = \frac{16}{5}$ km

Thus, Ram walk around $1\frac{2}{3}$ or $\frac{5}{3}$ to cover distance = $\frac{16}{5} \times \frac{5}{3} = \frac{16}{3}$

Exercise Time - 7.5

1. Divide :

(a) $\frac{8}{27} \div \frac{9}{4} = \frac{8}{27} \times \frac{4}{9} = \frac{32}{243}$

(b) $\frac{7}{10} \div \frac{5}{10} = \frac{7}{10} \times \frac{10}{5} = \frac{7}{5}$

(c) $\frac{1}{3} \div \frac{8}{5} = \frac{1}{3} \times \frac{5}{8} = \frac{5}{24}$

(d) $\frac{5}{7} \div \frac{1}{2} = \frac{5}{7} \times \frac{2}{1} = \frac{10}{7}$

(e) $\frac{2}{7} \div \frac{1}{3} = \frac{2}{7} \times \frac{3}{1} = \frac{6}{7}$

(f) $\frac{2}{5} \div \frac{1}{8} = \frac{2}{5} \times \frac{8}{1} = \frac{16}{5}$

2. Find the quotient :

(a) $4 \div \frac{1}{5} = 4 \times \frac{5}{1} = 20$

(b) $6 \div \frac{1}{2} = 6 \times \frac{2}{1} = 12$

(c) $5\frac{8}{4} \div 56 = \frac{28}{4} \div 56$

$= \frac{4}{28} \times 56 = \frac{224}{28} = 8$

(d) $14 \div 2\frac{2}{16} = 14 \div \frac{34}{16}$

$= 14 \times \frac{16}{34} = \frac{364}{34} = 24\frac{1}{34}$

(e) $5\frac{1}{3} \div 48 = \frac{16}{3} \div 48$

$= \frac{3}{16} \times 48 = 3 \times 3 = 9$

(f) $50 \div \frac{3}{7} = 50 \times \frac{7}{3} = \frac{350}{3} = 116\frac{2}{3}$

(g) $15 \div 5\frac{4}{2} = 15 \div \frac{14}{2}$

$= 15 \times \frac{2}{14} = \frac{30}{14} = 2\frac{2}{14}$

(h) $\frac{6}{7} \div 6 = \frac{7}{6} \times 6 = \frac{42}{6} = 7$

3. Do it yourself.

4. Solve the following :

(a) $5\frac{4}{2} \div 2\frac{1}{3} = \frac{14}{2} \div \frac{7}{3} = \frac{14}{2} \times \frac{3}{7}$

$= \frac{42}{14} = 3$

(b) $6\frac{1}{2} \div 1\frac{3}{8} = \frac{13}{2} \div \frac{11}{8} = \frac{13}{2} \times \frac{8}{11}$

$= \frac{104}{22} = 4\frac{16}{22}$

(c) $2\frac{2}{3} \div 1\frac{2}{3} = \frac{8}{3} \div \frac{5}{3} = \frac{8}{3} \times \frac{3}{5} = \frac{8}{5}$

(d) $4\frac{1}{6} \div 1\frac{1}{2} = \frac{25}{6} \div \frac{3}{2} = \frac{25}{6} \times \frac{2}{3}$

$= \frac{50}{18}$ or $2\frac{14}{18}$

(e) $5\frac{1}{4} \div 2\frac{4}{5} = \frac{21}{4} \div \frac{14}{5} = \frac{21}{4} \times \frac{5}{14}$

$= \frac{105}{56}$ or $1\frac{49}{56}$

(f) $1\frac{7}{8} \div 1\frac{2}{3} = \frac{15}{8} \div \frac{5}{3} = \frac{15}{8} \times \frac{3}{5}$

$= \frac{45}{40}$ or $1\frac{5}{40}$

Exercise Time - 7.6

1. Rachit spent on his house hold things of his salary $= \frac{3}{7}$

His salary = 4200

Hence, he spend $= 4200 \times \frac{3}{7}$

$= 600 \times 3 =$ **1800**

2. Reena distributed a part of chocolate to her a friends equally $= \frac{1}{3}$

Thus, $\frac{1}{3} \div 9 = \frac{1}{3} \times \frac{1}{9} = \frac{1}{27}$

3. A fruit seller has apples = 20 kg

He sold apples before lunch

$= 4\frac{2}{7} = \frac{30}{7}$ kg

He sold apples after lunch $= 6\frac{2}{13}$

$= \frac{80}{13}$ kg

Thus, the apples left in evening,

$= 20 - \left(\frac{30}{7} + \frac{80}{13}\right)$

$= 20 - \left(\frac{(30 \times 13) + (80 \times 7)}{7 \times 13}\right)$

$= 20 - \left(\frac{390 + 560}{91}\right) = 20 - \frac{950}{91}$

$= \frac{1820 - 950}{91} = \frac{870}{91} = 9\frac{51}{91}$

4. Do it yourself.

5. Number of children in a class = 36

Sick children $= \frac{1}{4}$

Number of children out of exhibition $= \frac{1}{3}$

Thus, Number of left children

$= 36 - \left(\frac{1}{4} + \frac{1}{3}\right)$

$= 36 - \left(\frac{3+4}{12}\right) = 36 - \frac{7}{12} = \frac{432 - 7}{12}$

$= \frac{425}{12}$ or $35\frac{5}{12}$

Chapter-8 (Decimals)

Exercise Time - 8.1

1. (a) true (b) false (c) false (d) true

2. (a) 0.35 (b) whole part (c) decimal part (d) unlike decimal

3. Write in decimal fraction :

(a)
```
  8 0 . 0 0 0
    5 . 0 0 0
    0 . 0 7
  + 0 . 0 0 4
  8 5 . 0 7 4
```

Hence, 80 + 5 + 0.07 + 0.004

= 85.074

(b)
```
  5 0 0 . 0 0
    4 0 . 0 0
      7 . 0 0
      0 . 9
  +   0 . 0 6
  5 4 7 . 9 6
```

Hence, 500 + 40 + 7 + 0.9 + 0.06

= 547.96

(c)
```
  9 . 0 0 0
  0 . 3 0 0
  0 . 0 5 0
+ 0 . 0 0 7
  9 . 0 5 7
```

Hence, 9 + 0.3 + 0.05 + 0.007

= 9.057

(d)
```
  6 0 . 0 0 0
    7 . 0 0 0
    0 . 5 0 0
    0 . 0 4 0
  + 0 . 0 0 3
  6 7 . 5 4 3
```

Hence, 60 + 7 + 0.5 + 0.04 + 0.003

= 67.543

(e)
$$\begin{array}{r} 800.00 \\ 90.00 \\ 7.00 \\ +\ \ 0.05 \\ \hline \boxed{897.05} \end{array}$$

Hence, 800 +90 +7 + 0.05
= 897.05

(f)
$$\begin{array}{r} 600.00 \\ 40.00 \\ 3.00 \\ +0.01 \\ \hline \boxed{643.01} \end{array}$$

Hence, 600 + 40 + 3 + 0.01
= 643.01

4. Express as decimals :

(a) $18\frac{5}{100}$ = **18.05** (b) $5\frac{1}{10}$ = **5.1**

(c) $17\frac{5}{100}$ = **17.05**

(d) $10\frac{3}{7}$ = **10.428** (e) $2\frac{5}{7}$ = **2.71**

(f) $615\frac{45}{100}$ = **615.45**

(g) $\frac{2}{7}$ = **0.285** (h) $35\frac{2}{10}$ = **35.2**

5. Make a place value chart and write these numbers. Write the place value of the underline digit in each :

(a) Place Value Chart

Thousand	100	
Hundred	100	
Tens	10	1
Ones	1	8
Tenths	$\frac{1}{10}$	2
Hundreds	$\frac{1}{100}$	3
Thousandths	$\frac{1}{1000}$	3

In 18.233 the place value of 3 is thousandths of $\frac{3}{1000}$ = .003 ans.

(b) Place value chart

Thousands 1000	(b)	(c)	(d)	(e)	(f)
Hundred 100					
Tens 10	2	4	3	6	
Ones 1	1	8	7	4	5
Tenths 1/10		2	1	7	5
Hundreds 1/100	8	7	8	1	5
Thousandths 1/1000		2	5	6	4

(b) In 24.36 the place value of 3 is tenth of $\frac{3}{10}$ = **0.3**

(c) In 18.745 the place value of 0. 18 is tens and ones = **18**

(d) In 2.175 the place value of 7 is Hundredth of $\frac{7}{100}$ = **0.07**

(e) In 87.815 the place value of 8 8 is tens is = **80**

(f) In 2.564 the place value of 5 is tenth of $\frac{5}{10}$ = **0.5**

6. Find the like and unlike decimal fractions from following number groups :

(a) 156.34, 163.02 (like decimal)
(∵ It is equal number of decimal place)

(b) 345.268, 24.006 – like decimal
(∵ It is equal number of decimal place)

(c) 65.345, 225.0135 – unlike decimal
(∵ It is unequal number of decimal)

(d) 24.9, 2.5 – like decimal
(∵ It is equal number of decimal)

(e) 2.79, 0.59 – like decimal
(∵ It is equal number of decimal)

7. Express the following in the expanded form :

(a) $76.356 = 70 + 6 + .3 + .04 + .006$
$= 70 + 6 + \frac{3}{10} + \frac{4}{100} + \frac{6}{1000}$

(b) $3.64 = 3 + .6 + .04 = 3 + \frac{6}{10} + \frac{4}{100}$

(c) $.30 = 0 + \frac{30}{100}$

(d) $.18 = 0 + .18 = 0 + \frac{18}{100}$

(e) $79.016 = 70 + 9 + .0 + .010 + .006$
$= 70 + 9 + \frac{0}{10} + \frac{10}{100} + \frac{6}{1000}$

(f) $7.346 = 7 + .3 + .04 + .006$
$= 7 + \frac{3}{10} + \frac{4}{100} + \frac{6}{1000}$

(g) $28.06 = 20 + 8 + .06$
$= 20 + 8 + \frac{6}{100}$

(h) $608.009 = 600 + 08 + .009$
$= 600 + 08 + \frac{9}{1000}$

8. (a) = (b) = (c) < (d) > (e) < (g) < (g) > (h) < (i) >

9. Find the equivalents decimal fractions :
5.0310, 5.301, 5.031, 5.03100, 5.013
Equivalents decimal fraction
5.301, 5.031, 5.013

10. Encircle the lowest number in each mow :
(a) 3.07 (b) 16.94 (c) 7.225 (d) 8.519

11. Encircle the highest number in each row:
(a) 187.19 (b) 98.16 (c) 608.17
(d) 85.31

12. Arrange the following in ascending and descending order :

(a) Ascending order = 31.18 < 37.60 < 72.16 < 94.17
Descending order
= 94.17 > 72.16 > 37.60 > 31.18

(b) Ascending order = 9.007 < 97.007 < 197.400 < 197.040
Descending order = 197.040 > 197.400 > 97.007 > 9.007

(c) Ascending order = 16.053 < 16.605 < 17.034 < 17.508
Descending order = 17.508 > 17.34 > 16.605 > 16.053

(d) Ascending order = 103.85 < 136.12 < 136.24 < 163.19
Descending order = 163.16 > 136.24 > 136.12 > 103.85

13. (a) (ii) (b) (iii) (c) (ii)

Exercise Time - 8.2

1. Simplify :

(a)
```
   5 1 9 . 2 4
 2 7 5 . 2 4 5
   8 9 . 1 0 5
 + 3 2 . 3 6 7
 9 1 5 . 9 5 7
```

Hence, 519.24 + 275.245 + 89.105 + 32.367 = 915.957

(b)
```
   3 4 . 6 5
   2 8 . 3
 1 5 6 . 2 3 5
+ 1 7 1 . 3 5
 3 9 0 . 5 3 5
```

Hence, 34.65 + 28.3 + 156.235 + 171.35 = 390.535

(c)
```
   2 7 5 . 0 2
   3 2 5 . 1 7 5
     8 4 . 5 7
   + 6 2 . 8 5
   7 4 7 . 6 1 5
```

Hence, 275.02 + 325.175 + 84.57 + 62.85 = 747.615

(d)
```
   3 7 . 3 9
   2 6 . 5 7
 5 3 8 . 3 0 0
+ 2 6 3 . 5 1
 8 6 5 . 7 7 0
```

Hence, 37.39 + 26.57 + 538.300 + 263.51 = 865.770

(e)
```
  105.109
  208.05
  555.65
   + 0.36
  889.169
```

Hence, 105.109 + 208.05 + 555 + 65 + 0.36 + = 869.169

2. Add the following :

(a)
```
     0.64 m
    16.34 m
+ 175.83 m
  192.81 m
```

Hence : 64m + 16.34m + 175.83m = 192.81m.

(b)
```
   ₹ 24.7
   ₹ 13.05
   ₹ 38.00
+ ₹ 17.74
  ₹ 93.49
```

Hence : 24.7 + 13.05 + 38.00 + 38 + 17.74 = 93.49

(c)
```
      0.0583 l
     14.0000 l
      2.8300 l
+ 105.6000 l
    122.4883 l
```

Hence : 0.0583*l* + 14*l* + 2.83*l* + 105.6l = 22.4883*l*

(d)
```
     6.005 kg
     0.005 kg
    15.160 kg
   + 1.007 kg
    22.177 kg
```

Hence : 6.005kg + 0.005 kg + 15.160kg + 1.007kg = 22.177kg

(e)
```
    56.340 kg
     0.350 kg
     3.650 kg
+ 425.600 kg
   485.940 kg
```

Hence : 56.34kg + 0.350kg + 3.65kg + 425.6kg = 485.94kg

Exercise Time - 8.3

1. Evaluate :

(a)
```
   17.138 km
  – 3.24  km
   13.898 km
```

Hence, 17.138km – 3.24km = 13.898km

(b)
```
   2.528 l
  – 2.000 l
   0.528 l
```

Hence, 2.528*l* – 2*l* = 0.528*l*

(c)
```
   ₹ 36.65
  – ₹  0.08
   ₹ 35.57
```

Hence, 36.65 – 0.08 = 35.57

(d)
```
   30.259 l
  – 1.800 l
   28.459 l
```

Hence, 30.259l – 1.8l = 28.459l

(e)
```
   0.86 l
  – 0.15 l
   0.71 l
```

Hence, 0.86l – 0.15l = 0.71l

(f)
```
   46.859 l
  – 4.900 l
   41.959 l
```

Hence, 46.859kg – 4.9kg = 41.959kg

(g)
```
   ₹ 68.50
  – ₹ 57.25
   ₹ 11.25
```

Hence, 68.50 – 57.25 = 11.25

(h)
```
  8 4 3 . 1 3 5 kg
– 3 5 . 3 0 0 kg
  8 0 7 . 8 3 5 kg
```

Hence, 843.135kg – 35.300kg = 807.835kg

2. Subtract :

(a)
```
  4 5 . 5 6 0
– 3 4 . 1 3 8
  1 1 . 4 2 2
```

Hence, 45.56 – 34.138 = 11.422

(b)
```
  8 . 5 0
– 6 . 2 4
  1 . 2 6
```

Hence, 8.50 – 6.24 = 1.26

(c)
```
  0 . 6 0
– 0 . 3 1
  0 . 2 9
```

Hence, 0.6 – 0.31 = 0.29

(d)
```
  1 6 . 5 0 0
– 3 . 8 5 4
  1 2 . 6 4 6
```

Hence, 16.5 – 8854 = 12.646

(e)
```
  4 3 . 1 6 5
– 2 8 . 7 6 0
  1 4 . 4 0 5
```

Hence, 43.165 – 28.760 = 14.405

(f)
```
  1 7 . 2 5 9
– 0 . 6 4 2
  1 6 . 6 1 7
```

Hence, 17.259 – 0.642 = 16.617

(g)
```
  0 . 6 8 0
– 0 . 3 5 2
  0 . 3 2 8
```

Hence, 0.68 – 0.352 = 0.328

(h)
```
  0 . 8 0 0
– 0 . 3 5 8
  0 . 4 4 2
```

Hence, 0.8 – 0.358 = 0.442

Exercise Time - 8.4

1. One bottle perfume contains = 54.5ml

Other bottle perfume contains = 128.74ml

```
  1 2 8 . 7 4 ml
– 5 4 . 5 0 ml
    7 4 . 2 4 ml
```

Thus, the larger bottle contain more perfume

2. Kareena bought a doll = 125.00

She already has one that costs = 75.40

```
  ₹ 1 2 5 . 0 0
– ₹   7 5 . 4 0
  ₹ 2 0 0 . 4 0
```

Thus, She spent on both the dolls

3. Length of a electric wire = 18m

Lenth of two cut pieces 8m + 7.5m = 15.5m

```
  1 8 . 0 m
– 1 5 . 5 m
    2 . 5 m
```

Thus, length of left wire = 2.5 m

4. Length of lace for Madhn's skirt = 53.15cm

Length of lace for Madhn's top = 72.65cm

```
  5 3 . 1 5 cm
+ 7 2 . 6 5 cm
  1 2 5 . 8 0 cm
```

Thus, she need in all = 125.80 cm

5. Sholin had rupee of note = 500

He bought his dress = 475.24

```
  ₹ 5 0 0 . 0 0
– ₹ 4 7 5 . 2 4
  ₹   2 4 . 7 6
```

Thus, he get back the money = 24.76

6. We should added 3.945 to 2.285 to get 6.230

```
  6 . 2 3 0 cm
– 2 . 2 8 5 cm
[ 3 . 9 4 5 cm ]
```

7. In 2009 Sunil's height tall = 1.65m
In two years his height increased = .5m

```
  ₹ 1 8 5 . 5 0
+ ₹       6 . 4 5
[ ₹ 1 9 1 . 9 5 ]
```

Thus, his height in 2011 = 1.65m + (.5 × 2)m = 1.65m + 1.0m = 2.65 m

8. In Arun's money bag money = 185.50
More than Arun's Saloni has = 6.45
Thus, Saloni has money

Exercise Time - 8.5

1. Find the product :

(a)
```
      0.7
    × 2 3
    -----
      2 1
    1 4 ×
  [ 1 6.1 ]
```

Hence, 0.7 × 23 = 16.1

(b)
```
      2.8
      × 6
  [ 1 6.8 ]
```

Hence, 2.8 × 6 = 16.8

(c)
```
      3.8
    × 1 4
    -----
    1 5 2
    3 8 ×
  [ 5 3.2 ]
```

Hence, 3.8 × 14 = 53.2

(d)
```
  0.9
  × 5
[ 4.5 ]
```
Hence, 0.7 × 23 = 16.1

(e)
```
      4 2.2 3
        × 2 8
      -------
    3 3 7 8 4
    8 4 4 6 ×
[ 11 8 2.4 4 ]
```

Hence, 42.23 × 28 = 1182.44

(f)
```
      1 7.6
      ×2 1
      -----
      1 7 6
    3 5 2 ×
  [ 3 6 9.6 ]
```

Hence, 17.6 × 21 = 36.96

(g)
```
      6.5 8 4
      0.4 1
      -------
      6 5 8 4
  2 6 3 3 6 ×
[ 2.6 9 9 4 4 ]
```

Hence, 6.584 × 0.41 = 2.69944

(h)
```
      2 6.1 5
        × 2.8
      -------
    2 0 9 2 0
    5 2 3 0 ×
  [ 7 3.2 2 0 ]
```

Hence, 26.15 × 2.8 = 73.220

(i)
```
      6 1 7.2 8
        × 5.0 5
      ---------
    3 0 8 6 4 0
    0 0 0 0 0 ×
  3 0 8 6 4 0 × ×
[ 3 1 1 7.2 6 4 0 ]
```

Hence, 617.28 × 5.05
= 3117.2640

(j)
```
      3 4.1 8
        × 1 4
      -------
    1 3 6 7 2
    3 4 1 8 ×
  [ 4 7 8.5 2 ]
```

Hence, 34.18 × 14 = 478.52

(k)
```
      6.1 5
      × 3.8
      -----
    4 9 2 0
  1 8 4 5 ×
[ 2 3.3 7 0 ]
```

Hence, 6.15 × 3.8 = 23.370

(l)

```
      5 9.4 5 6
          × 4.7
    ----------
    4 1 6 1 9 2
  2 3 7 8 2 4 ×
  [2 7 9.4 4 3 2]
```

Hence, 59.456 × 4.7 = 279.4432

(m)

```
      5 1 8.3 4
          × 3.0 3
    ----------
    1 5 5 5 0 2
    0 0 0 0 0 ×
  1 5 5 5 0 2 × ×
  [1 5 7 0.5 7 0 2]
```

Hence, 518.34 × 3.03= 1570.5702

(n)

```
      3 1 8.1 6 6
          × 1 3
    ----------
    9 5 4 4 9 8
  3 1 8 1 6 6 ×
  [4 1 3 6.1 5 8]
```

Hence, 318.166 × 13 = 4136.158

(o)

```
      0.8 6 7
      × 4 5 0
    ----------
    0 0 0 0
  4 3 3 5 ×
  3 4 6 8 × ×
  [3 9 0.1 5 0]
```

Hence, 0.867 × 450 = 390.150

Exercise Time - 8.6

1. Find the product :

(a)

```
      8.3 6
      × 1 0
  [8 3. 6 0]
```

Hence, 8.36 × 10 = 83.60

(b)

```
      1.7
    × 1 0
  [1 7.0]
```

Hence, 1.7 × 10 = 17.0

(c)

```
    1 9 8.4
      × 1 0
  [1 9 8.0]
```

Hence, 198.4 × 10 = 19.80

(d)

```
      6.8 6
      × 1 0
  [6 8 6.0]
```

Hence, 6.86 × 10 = 686

(e)

```
      4 2.9
      × 1 0
  [4 2 9.0]
```

Hence, 42.9 × 10 = 429

(f)

```
      0.8 6 5
        × 1 0
  [0 8.6 5 0]
```

Hence, 0.865 × 10 = 08.650

(g)

```
      0.7 6
    × 1 0 0
  [7 6.0 0]
```

Hence, 0.76 × 100 = 75

(h)

```
      5 7 8.5
        × 1 0 0
  [5 7 8 5 0.0]
```

Hence, 578.5 × 100 = 57850

(i)

```
      0.8 3 1
    × 1 0 0 0
  [8 3 1.0 0 0]
```

Hence, 0.831 × 1000 = 831

(j)

```
        6.4 6
    ×1 0 0 0
  [6 4 6 0.0 0]
```

Hence, 6.46 × 1000 = 6460

(k)

```
      4.0 0 6
    × 1 0 0 0
  [4006.0 0 0]
```

Hence, 4.006 × 1000 = 4006

(l)

```
      0.8 7
    × 1 0 0 0
  [8 7 0.0 0]
```

Hence, 0.87 × 1000 = 870

(m)
```
      1 2.8 4
    × 1 0 0
  1 2 8 4.00
```
Hence, 12.84 × 100 = 1284

(n)
```
      0.4
    ×1 0 0
    4 0 0 0
```
Hence, 0.4 × 100 = 40

(o)
```
      3.8 7 5
    × 1 0 0
  3 8 7.5 0 0
```
Hence, 3.875 × 100 = 387.500

(p)
```
      8 2.8
    × 1 0 0
  8 2 8 0.0
```
Hence, 82.8 × 100 = 8280

(q)
```
    0.0 0 5
  × 1 0 0 0
    5.0 0 0
```
Hence, 0.005 × 1000 = 5

(r)
```
      6 7.8
    × 1 0 0 0
  6 7 8 0 0.0
```
Hence, 67.8 × 1000 = 67800

Exercise Time - 8.7

1. (a) 3.6 (b) 14.38 (c) 0.5 (d) 38.54 (e) 2.4 (f) 345.0005 (g) 0 (h) 0 (i) 1 (j) 0.8 (k) 6 (l) 0.2

Exercise Time - 8.8

1. Find the quotient :

(a)
```
256 ) 1 2 8.4 2 ( 21.403
      1 2
      0 0 8
        – 6
          2 4
        – 2 4
            2 0
          – 1 8
              2
```
Hence, 128.42 ÷ 6 = 21.403

(b)
```
3 ) 5 1 0.3 0 9 ( 170.103
    – 3
      2 1
    – 2 1
        0 0 3 0
      – 3 0
          0 0 9
        – 9
          0
```
Hence, 510.309 ÷ 3 = 170.103

(c)
```
5 ) 6 2.5 ( 12.5
    – 5
      1 2
    – 1 0
        2 5
      – 2 5
        0 0
```
Hence, 62.5 ÷ 5 = 12.5

(d)
```
5 ) 7 1 8.5 0 5 ( 143.7101
    – 5
      2 1
    – 2 0
        1 8
      – 1 5
          3 5
        – 3 5
          0 0 5 0
        – 5 0
            0 0 5
          × 5
            0
```
Hence, 718.505 ÷ 5 = 143.7101

(e)
```
4 ) 1 2.5 ( 3.1225
    – 1 2
      0 0 5
        – 4
          1 0
        – 8
          2 0
        – 2 0
          0 0
```

Hence, 12.5 ÷ 4 = 3.125

(f) 6) 52.36 (8.726
−48
43
−42
16
−12
40
−36
4

Hence, 52.36 ÷ 6 = 8.726

(g) 11) 69.54 (6.3218
−66
35
−33
24
−22
20
−11
90
−88
2

Hence, 69.54 ÷ 11 = 6.3218

(h) 2) 42.56 (21.28
−4
02
−2
05
−4
16
−16
00

Hence, 42.56 ÷ 2 = 21.28

(i) 24) 28.08 (1.17
−24
40
−24
168
−168
000

Hence, 28.08 ÷ 24 = 1.17

(j) 25) 132.5 (5.3
−125
75
−75
00

Hence, 132.5 ÷ 25 = 5.3

(k) 12) 16.576 (1.381
−12
45
−36
97
−96
16
−12
4

Hence, 16.576 ÷ 12 = 1.381

(l) 13) 1.345 (0.1034
−13
0045
−39
60
−52
8

Hence, 1.345 ÷ 13 = 0.1034

2. Divide and find the quotient :

(a) 18) 145600 (8088
−144
160
144
160
−144
16

Quotient = 8.088

(b) 14) 5160 (368.571
−42
96
−84
120
−112
80
−70
100
−98
20
−14
6 Q = 368.571

(c) 28) 54824 (1958
−28
268
−252
162
−140
224
−224
000 Q = 1958

(d) 25) 131.95 (5.278
−125
69
−50
195
−175
200
−200
000 Q = 5.278

(e) 8) 58.8 (7.35
−56
28
−24
40
40
× Q = 7.35

(f) 2) 2.04 (1.02
−2
04
−04
00 Q = 1.02

(g) 30) 666 (22.2
−60
66
−60
60
−60
00 Q = 22.2

(h) 15) 459.5 (3.63
−45
95
−90
50
−45 Q = 3.63
5

(i) 1.3) 0.00150 (0.00115
−0.00
15
−13
20
−13
70
−65
Q = 0.00115 50

(j) 104) 2618 (25.173
−208
538
−520
180
−104
760
−728
320
−312
Q = 25.173 8

(k) 14) 47.6 (3.4
− 42 ↓
56
− 56
× Q = 3.4

(l) 26) 200 (0.79
− 0 ↓
206
182
240
− 234
6 Q = 0.79

Exercise Time - 8.9

1. Divide :

(a) 500) 85 (.017
− 50
350
− 350
×

Hence, 8.5 ÷ 500 = 0.017

(b) 20) 680 (0.34
− 600
800
− 800
×

Hence, 6.8 ÷ 20 = 0.34

(c) 30) 963 (321
− 90 ↓
63
− 60
30
− 30
×

Hence, 9.63 ÷ 30 (Q) = 03.321

(d) 50) 50 (1
− 50
×

Hence, 9.63 ÷ 30 = 0.01

(e) 600) 5451 (0.965
− 5400
5100
4800
3000
− 3000
×

Hence, 5.45 ÷ 600 (quotient) = 0.965

(f) 100) 1200 (0.012
− 100
200
− 200
×

Hence, 6.12 ÷ 100 = 0.0012

(g) 7000) 21070 (0.00301
− 21000
7000
− 7000
×

Hence, 21.07 ÷ 7000 = 0.00301

(h) 200) 812 (0.406
− 800
1200
− 1200
×

Hence, 81.2 ÷ 200 = 0.406

(i) 3000) 684600 (0.2252
− 6000 ↓
8460
− 6000
4600
− 6000
6000
− 6000
×

Hence, 684.6 ÷ 3000 = 0.2252

(j) 800) 1072 (0.034
− 800
2720
− 2400
3200
− 3200
0

Hence, 10.72 ÷ 800 = 0.034

(k) 8) 37496 (46.87
− 32
54
− 48
69
− 64
56
− 56
×

Hence, 374.96 ÷ 8 = 46.87

(l) 100) 14200 (0.0142
− 100
420
− 400
200
− 200
×

Hence, 1.42 ÷ 100 = 0.0142

(m) 30) 33 (0.11
− 30
30
− 30
×

Hence, 3.3 ÷ 30 = 0.11

(n) 300) 300 (0.001
− 300
×

Hence, 0.3 ÷ 300 = 0.001

(o) 400) 1204 (0.0301
− 1200
400
− 400
×

Hence, 12.04 ÷ 400 = 0.0301

2. Find the quotient :

(a) 10) 8250 (0.825
− 80
25
− 20
50
− 50
×

Quotient = 0.825

(b) 10) 270 (0.27
− 20
70
− 70
0

Quotient = 0.27

(c) 10) 195.5 (19.55
− 10
95
− 90
55
− 50
50
50
×

Quotient = 19.55

(d) 10) 3.65 (0.365
− 30
65
− 60
50
− 50
× Q = 0.365

(e) 1000) 1746 (0.1746
− 1000
7460
− 7000
4600
− 4000
6000
− 6000
×

Q = 0.1746

(f) 100) 187.5 (1.875
− 100
875
− 800
750
700
500
500
0

Q = 1.875

(g) 10) 6638 (0.6638
− 60
638
− 60
38
30
80
− 80
0

Q = 0.6638

(h) 100) 1784.5 (17.845
− 100
784
− 700
845
− 800
450
− 400
500
− 500
0

Q = 17.845

(i) 1000) 1867.85 (18.6785
− 100
867
− 800
678
− 600
785
− 700
850
− 800
500
− 500
×

Q = 18.6785

(j) 1000) 8765 (0.8765
− 8000
7650
− 7000
6500
− 6000
5000
− 5000
×

Q = 0.8765

(k) 100) 650 (0.065
− 600
500
− 500
×

Q = 0.065

(l) 100) 568.168 (5.68168
− 500
681
− 600
816
− 800
168
− 100
680
− 600
800
− 800
×

Quotient = 5.68168

(m) 6) 29.994 (4.999
−24
59
−54
59
−54
54
−54
×

Quotient = 0.004

(n) 10) 20 (0.2
20
×

Quotient = 0.2

(o) 1000) 4000 (0.004
−4000
×

Quotient = 0.004

Exercise Time - 8.10

1. Weight of sugar in 6 bags = 29.994
Thus, weight each bags = 4.999

6) 29.994 (4.999
−24
59
−54
59
−54
54
−54
×

2. If cost of rice for 1kg = 24.5
Cost of 4.5kg rice

24.5
× 4.5
1225
980 ×
100.25

3. Among 24 people the cake was divided = 9.6 kg

24) 9.6 (0.4
−9.6
×

Thus, share of each person = 0.4kg

4. Salary of sweeper is = 94.40 per day

94.40
× 18
75520
9440 ×
₹1699.20

Thus, In 18 days he will earn = ₹1699.20

5. Consumsion of per litre diesel for generator = 3.125*l*

3.125
× 15
15625
3125 ×
46875 *l*

Thus, for 15 hours consumsion = 46875 *l*

6. Cost of one pen = 16.45

16.45
× 23
4935
3290 ×
₹368.35

Thus, Cost of 23 such pens = ₹368.35

7. Refreshment for NCC officer distributed = ₹ 186
Each cadet received = 12.40

1240) 18600 (15
−1240
6200
−6200
×

Thus, number of cadet there were = 15

8. Cost of 25 transistors = 6250.50

Thus,

```
25 ) 6 2 5 0 . 5 0 ( 250.02
   – 5 0
     1 2 5
   – 1 2 5
           0 5 0
             5 0
             ×
```

Hence, the cost of one transistor = 25.02

9. (a) (ii) (b) (ii) (c) (iii) (d) (iv)

Chapter-9 (Patterns)

Exercise Time - 9.1

1. (a) 6 + 10 (b) 15 + 21 (c) 45 + 55
(d) 10 + 15

2. (a) 25 (odd) (b) 36 (even)(c) 9 (odd)
(d) 16 (even) (e) 15 (odd) (f) 6 (even)

3. 16 **4.** 2 and 2

Exercise Time - 9.2

Do yourself

Chapter-10 (Rounding off Numbers)

Exercise Time - 10.1

1. Round off each of the following to the nearest ten (10).

(Note) While rounding to the nearest ten the ones digit is rounded to the nearest ten.

(a) 75 – 80 (b) 63 – 60
(c) 1684 – 1680 (d) 1564 – 1560
(e) 621 – 620 (f) 3261 – 3260
(g) 775 – 780 (h) 247 – 250
(i) 376 – 380

2. Round off each of the following to the nearest hundred (100).

Note : While rounding to the nearest hundred, the ones and tens digit are rounding to the nearest hundred.

(a) 279 – 300 (b) 68 – 100
(c) 4813 – 4800 (d) 1287 – 1300
(e) 451 – 500 (f) 687 – 700
(g) 5289 – 5300 (h) 8061 – 8100
(i) 2225 – 2200 (j) 816 – 800

3. Round off each of the following to the nearest thousand (1000)

(a) 16548 – 17000 (b) 6015 – 6000
(c) 3469 – 3000 (d) 19426 – 19000
(e) 6130 – 6000 (f) 75758 – 76000
(g) 10715 – 11000 (h) 7006 – 7000
(i) 12057 – 12000

4. Round off each of the following to the nearest ten thousand (10,000)

(a) 187561 – 188000
(b) 361442 – 361000
(c) 561305 – 561000
(d) Do yourself

5. Do yourself

Exercise Time - 10.2

1. Round off to the nearest ones place :

(a) 34.8 – 35 (b) 4.3 – 4 (c) 60.1 – 60
(d) 8.9 – 9 (e) 51.5 – 52 (f) 490.6 – 491

2. Round off the decimal part to the nearest tenths (1 decimal place) :

(a) 32.12 – 32.10 (b) 36.76 – 36.80
(c) 172.06 – 172.10 (d) 65.55 – 165.60
(e) 29.53 – 29.60 (f) 7.63 – 7.70
(g) 372.863 – 372.870
(h) 6.659 – 6.660 (i) 38.105 – 38.11

3. Round off the decimal part to the nearest hundredths (2 decimal places) :

(a) 2.742 – 2.700 (b) 3.176 – 3.200
(c) 7.1517 – 7.1500
(d) 52.626 – 52.600
(e) 57.415 – 57.400
(f) 26.132 – 26.100
(g) 53.1465 – 53.1500
(h) 517.428 — 517.400
(i) 63.412 – 63.400

4. 6.30 p.m ⇒ 6.30 p.m

5. 7 years, 3 months and 12 days
$\Rightarrow$ 7 years, 3 months

6. 658 $\Rightarrow$ 600 animals

Chapter-11 (Percentage)

Exercise Time - 11.1

1. (a) 100 (b) % (c) 0.41 (d) 1.5%

2. **Convert these fraction as percentages using the symbol % :**

(a) $\frac{3}{30} = \frac{3}{30} \times 100\,\% = \frac{300}{30} = \mathbf{10\%}$

(b) $\frac{19}{50} \times 100\,\% = \frac{1900}{50}\,\% = \mathbf{38\%}$

(c) $\frac{13}{25} \times 100\,\% = \frac{1300}{25}\,\% = \mathbf{52\%}$

(d) $\frac{9}{20} \times 100\,\% = \frac{900}{20}\,\% = \mathbf{45\%}$

(e) $\frac{1}{9} \times 100\,\% = \frac{100}{9}\,\% = \mathbf{11.11\%}$

(f) $\frac{69}{100} \times 100\,\% = \frac{6900}{100}\,\% = \mathbf{69\%}$

(g) $\frac{19}{25} \times 100\,\% = \frac{1900}{25}\,\% = \mathbf{76\%}$

(h) $\frac{2}{16} \times 100\,\% = \frac{200}{16}\,\% = \mathbf{12.5\%}$

3. **Express these numbers as percentages using the symbol % :**

(a) 8 = 8 × 100 % = 800%

(b) 10 × 100% = 1000%

(c) 13 = 13 × 100 = 1300%

(d) 17 × 100 = 1700%

Remaining part do it yourself.

4. **Express these fractions as percentages using the symbol % :**

(a) $2\frac{1}{3} = \frac{2 \times 3 + 1}{3} \times 100\ \% = \frac{7}{3} \times 100\ \% = \frac{700}{3}\,\% = \mathbf{233.33\ \%}$

(b) $1\frac{3}{5} = \frac{8}{5} \times 100\,\% = \frac{800}{5}\,\% = \mathbf{160\%}$

(c) $1\frac{5}{6} = 1\frac{5}{6} \times 100\ \% = \frac{11}{6} \times 100\ \% = \frac{1100}{6}\,\% = \mathbf{183.33\ \%}$

(d) $2\frac{1}{7} = 2\frac{1}{7} \times 100\ \% = \frac{15}{17} \times 100\ \% = \frac{1500}{7}\,\% = \mathbf{214.285\ \%}$

(e) $3\frac{11}{5} = 3\frac{11}{5} \times 100\ \% = \frac{26}{5} \times 100\ \% = \frac{2600}{5}\,\% = \mathbf{520\ \%}$

(f) $5\frac{1}{10} = 5\frac{1}{10} \times 100\ \% = \frac{51}{10} \times 100\ \% = \frac{5100}{100} = \mathbf{51\%}$

(g) $2\frac{7}{50} = 2\frac{7}{50} \times 100\ \% = \frac{107}{50} \times 100\ \% = \frac{10700}{50}\,\% = \mathbf{214\%}$

(h) $3\frac{2}{11} = 3\frac{2}{11} \times 100\ \% = \frac{35}{11} \times 100 = \frac{3500}{11}\,\% = \mathbf{318.18\%}$

5. **Express these decimals as percentages using the symbol % :**

(a) 1.8 = 1.8 × 100 % = **180.0 %**

Do yourself

6. **Convert these percentages into fractions reduced to the lowest form :**

(a) $25\% = \frac{25}{100}$ (b) $75\% = \frac{75}{100}$

(c) $6\frac{5}{5}\% = \frac{41}{6} \times 100 = \frac{4100}{6}$

(d) $5\frac{1}{7}\% = \frac{36}{7} \times 100\,\% = \frac{3600}{7}$

(e) (f) (g) (h) Do it yourself

7. **Convert these percentages into decimals :**

(a) $400\% = \frac{400}{100} = \mathbf{4}$

(b) $453\% = \frac{453}{100} = \mathbf{4.53}$

(c) $7.5\% = \frac{75}{1000} = \mathbf{0.075}$

(d) $425\% = \frac{425}{100} = \mathbf{4.25}$

(e) $20.6\% = \frac{206}{1000} = \mathbf{0.206}$

(f) $35\% = \frac{35}{100} =$. **0.35**

(g) $335\% = \frac{335}{100} = \mathbf{3.35}$

(h) $107\% = \frac{107}{100} = \mathbf{1.07}$

Exercise Time - 11.2

1. (a) Suppose the number = x

$x \times \frac{40}{100} = 35 \qquad x = \frac{35 \times 100}{40}$

$= \frac{3500}{40} = \mathbf{87.5}$

(b) Suppose the number = x

Thus, $x \times \frac{20}{100} = 38 \qquad x$

$= \frac{38 \times 100}{20} = \frac{3800}{20} = \mathbf{190}$

(c) Do yourself

2. Find the value of each of the following :

(a) 100% of $86 = 86 \times \frac{100}{100} =$

(b) 40% of 40kg $40 \times \frac{40}{100} = \frac{1600}{100} = \mathbf{16}$

(c) $1500 \times \frac{96}{100} = 15 \times 96$

= **1440 marks**

(d) $34 \times \frac{14.6}{100} = \frac{486.4}{100} = \mathbf{4.864\ ml}$

Remaining part do it yourself.

3. (a) (iv) 100 (b) (ii) per thousand

(c) (i) 160 (d) (iii) $\frac{7}{20}$

4. Solve the problems :

(a) I had rupees = 400 I spent = 20%

Thus $400 - \left(400 \times \frac{20}{100}\right) = 4 \times 20$

$400 - = 80 =$ **320**

(b) A had rupees = 264

He spent = 75%

Hence his left money $= 264 \times \frac{75}{100}$

$= 2.64 \times 75 =$ **198.00**

(c) Number of children in a class = 60

% of absented children = 25%

Thus, Number of present children

$= 60 - \left(60 \times \frac{25}{100}\right)$

$= 60 - \left(60 \times \frac{1}{4}\right) = 60 - 15 =$ **45**

(d) Total marks = 360

Ishan got = 68%

Thus, she get marks $= 360 \times \frac{68}{100}$

$= 3.6 \times 68 =$ **244.8**

(e) A metal contains, tin = 54%

Aluminium = 22%

Quantity of metal = 1kg

Thus, quantity of zinc

$= 1 - \left(1 \times \frac{54}{100} + 1 \times \frac{22}{100}\right)$

$= 1 - (0.54 + 0.22) = 1 - 0.76$

= **0.24**

Hence, the Zinc = 24 gram

(f) In one year the town population has increased = 6%

Last year its population = 24245

Thus, In present year its population is,

$24245 + \left(24245 \times \frac{6}{100}\right)$

$= 24245 + (242.45 \times 6)$

$= 24245 + 1454.70$

= **25699.70**

Chapter-12 Shopping Bills

Prepare the following bills for these customers. Remember to use the correct format for a bill and always check your bill.

Vijay Confectioners				
Bill No. 300				
Customer's Name : Hardik				
S.N	Description	Qty.	Cost Permit	Amt.
1.	Bathing soap	1	₹10.25	₹10.25
2.	Washing powder	500g	₹26.50	₹26.50
3.	Blade	1 Packet	₹18.00	₹18.00
4.	Coconut oil	500 ml	₹38.00	₹19.00
5.	Tooth paste	1	₹32.25	₹32.25
		Grand	Total	₹92.75

2, 3, 4, 5, 6, 7. Do yourself

Chapter-13 (Profit and Loss)

Exercise Time - 13.1

1. (a) Profit ₹ 4
(b) Loss ₹ 4
(c) Profit ₹ 4.50
(d) Selling price ₹ 31.50
(e) Selling price ₹ 31
(f) Selling price ₹ 894
(g) Cost price ₹ 1665
(h) Cost price ₹ 1520
(i) Cost price ₹ 7380
(j) Cost price ₹ 1380

2. Mr. Thakur bought a painting = ₹ 1420
He sold it (SP) = ₹ 1800
CP = ₹ 1420, SP = ₹ 1800
Profit = SP – CP = ₹ 1800 – ₹ 1420
= ₹ **380**

3. CP = ₹ 1850, Loss = ₹ 185 SP = ?
SP = CP + Loss = ₹ 1850 + ₹ 185
= ₹ **2035**

4. Cost price (CP) of car = ₹ 231450
SP of car = ₹ 213540
Since SP < CP, therefore, he made loss
Loss = CP – SP = ₹ 231450 – ₹ 213540
= ₹ **17910**

5. Cost of motorbike = ₹ 19600
Its repairing cost = ₹ 1500
Its selling price (SP) = ₹ 21100
Total cost price (CP) of motorbike cost price + repairing cost
₹ 19600 + ₹ 1500 = ₹ **21100**
Since SP = CP So there is neither loss nor profit.

6. SP of watch = ₹ 470, Profit = ₹ 65
So, the cost price of watch
= SP – Profit = ₹ 470 – ₹ 65 = ₹ **405**

Exercise Time - 13.2

1. Find out the loss and loss percentage for each of these sales :

(a) CP = ₹ 4565, SP = ₹ 3445
So, Loss = CP – SP = ₹ 4565– ₹ 3445 = ₹ **1120**

Hence, Loss % $= \frac{\text{Loss}}{\text{CP}} \times 100$

$= \frac{1120}{4565} \times 100 = \frac{112000}{4565} =$ ₹ **24.36**

(b) CP = ₹ 1500, SP = ₹ 1140
So, Loss = CP – SP = ₹ 1500 – ₹ 1140 = ₹ **360**

Hence Loss % $= \frac{\text{Loss}}{\text{CP}} \times 100$

$= \frac{360}{1500} \times 100 =$ **24%**

(c) CP = ₹ 900, SP = ₹ 650
So, Loss = CP – SP = 900 – 650
= ₹ 250

Hence, Loss % $= \frac{\text{Loss}}{\text{CP}} \times 100$

$= \frac{250}{900} \times 100 = 27.77$

2. Find out the profit and profit percentage for each of these sales :

(a) CP = 2000, SP = 2500

So, Profit = SP – CP = ₹ 2500 – ₹ 2000 = ₹ **500**

$$\text{Profit \%} = \frac{\text{Profit}}{\text{CP}} \times 100$$

$$= \frac{500}{2000} \times 100 = 25\%$$

(b) CP = 65, SP = 75

So, Profit = SP – CP = ₹ 75 – ₹ 65 = ₹ **10**

$$\text{Profit \%} = \frac{\text{Profit}}{\text{CP}} \times 100$$

$$= \frac{10}{65} \times 100 = 15.38$$

(c) CP = ₹ 4000, SP = ₹ 4200

So, Profit = SP – CP = ₹ 4200 – ₹ 4000 = ₹ **200**

$$\text{Hence, Profit \%} = \frac{\text{Profit}}{\text{CP}} \times 100$$

$$= \frac{200}{4000} \times 100 = 5\%$$

3. CP of house = ₹ 3,00,000

SP of house = ₹ 3,45,000

Since, SP > CP therefore he made profit

Profit = SP – CP

= ₹ 345000 – ₹3 ,00,000 = ₹ 45000

$$\text{Hence, Profit \%} = \frac{\text{Profit}}{\text{CP}} \times 100$$

$$= \frac{45000}{3,00,000} \times 100 = 15\%$$

4. CP of watch = ₹ 700

SP of watch = ₹ 585

Since CP > SP therefor it made loss

So, Loss = ₹ 700 – ₹ 585 = ₹ 115

$$\text{Hence, Loss \%} = \frac{115}{700} \times 100 = 16.42$$

5. CP of old car = ₹ 135000

Spent on repair = ₹ 13000

Total CP = ₹ 148000

SP of old car = ₹ 154000

Since CP < SP therefore it made profit

Profit = ₹ 154000 (SP) – 148000 (CP) = ₹ 6000

$$\text{Hence, Profit \%} = \frac{6000\ (\text{Profit})}{148000\ (\text{CP})} \times 100$$

= 4.05%

6. CP of TV = ₹ 9475

SP on reduction = 20%

$$\text{Thus, SP} = ₹\ 9475 \times \frac{20}{100} = ₹\ \mathbf{1895}$$

7. CP of quintals of when = ₹ 20800

SP of per kg = ₹ 24

Since 1 quintal = 100kg

Hence 10 quintal = 1000kg

Thus, 1000 kg × 24 per kg

= ₹ **24000kg**

Since CP < SP therefore it made a profit

Profit = 24000 – 20800 = 3200

$$\text{So, Profit \%} = \frac{\text{Profit}}{\text{CP}} \times 100$$

$$= \frac{3200}{20800} \times 100 = \mathbf{15.38\%}$$

8. Do it yourself.

9. (a) (iv) (b) (iii) (c) (iii) (d) (ii)

Chapter-14 (Simple Interest)

1. Find the interest to be paid after 1 year :

(a) P = 1600, R = $12\frac{1}{2}\% = \frac{25}{2}$,

T = 1 year

$$\text{Interest} = \frac{P \times R \times T}{100}$$

$$= \frac{1600 \times 25 \times 1}{100 \times 2} = \frac{1600}{4 \times 2} = \frac{1600}{8}$$

= **200**

(b) P = 1700, R = 11%, T = 1 year

$$\text{Interest} = \frac{P \times R \times T}{100}$$

$$= \frac{1700 \times 11 \times 1}{100} = \frac{18700}{100} = \mathbf{187}$$

(c) P = 680, R = 10%, T = 1year

$$\text{Interest} = \frac{P \times R \times T}{100}$$

$= \frac{680 \times 10 \times 1}{100} = \frac{6800}{100} = \mathbf{68}$

(d) P = 800, R = 14%, T = 1year

Interest $= \frac{P \times R \times T}{100}$

$= \frac{800 \times 14 \times 1}{100} = \frac{11200}{100} = \mathbf{112}$

(e) P = 1200, R = $2\frac{1}{3} = \frac{7}{3}$, T = 1year

Interest $= \frac{P \times R \times T}{100}$

$= \frac{1200 \times 7 \times 1}{100 \times 3} = \frac{400 \times 7}{100} = 4 \times 7$

$= \mathbf{28}$

(f) P = 650, R = 9%, T = 1year

Interest $= \frac{P \times R \times T}{100}$

$= \frac{650 \times 9 \times 1}{100} = \frac{4050}{100} = \mathbf{40.5}$

2. Find the interest and the amount when :

(a) P = 600, R = 7%, T = 10 years

Interest $= \frac{P \times R \times T}{100}$

$= \frac{600 \times 7 \times 10}{100} = 6 \times 70 = 420$

Amount (A) = Interest + P = ₹ 420 + ₹ 600 = ₹ 1020

(b) P = ₹ 3500, R = 9%, T = 3years

Interest $= \frac{P \times R \times T}{100}$

$= \frac{3500 \times 9 \times 3}{100} = 35 \times 27 =$ **₹ 945**

Amount = SI + P = ₹ 945 + ₹ 3500 = **₹ 4445**

(c) R = 2500, R = 4%, T = 3years

Interest $= \frac{P \times R \times T}{100}$

$= \frac{2500 \times 4 \times 3}{100} = 25 \times 12 = 300$

Amount = Interest + P = ₹ 300 + ₹ 2500 = **₹ 2800**

(d) P = 1200, R = 12%, T = 6years

Interest $= \frac{P \times R \times T}{100}$

$= \frac{1200 \times 12 \times 6}{100} = 12 \times 72 = 864$

Amount = Interest + P = ₹ 864 + ₹ 1200 = **₹ 2064**

(e) P = 5000, R = 5%, T 4years

Interest $= \frac{P \times R \times T}{100}$

$= \frac{5000 \times 5 \times 4}{100} = 50 \times 20 =$ ₹ 1000

Amount = Interest + P = ₹ 1000 + ₹ 5000 = **₹ 6000**

(f) P = 6000, R = 8%, T = 4years

Interest $= \frac{P \times R \times T}{100}$

$= \frac{6000 \times 8 \times 4}{100} = 60 \times 32 =$ ₹ 2040

Amount = Interest + P = ₹ 2040 + ₹ 6000 = **₹ 8040**

3. Find the interest and the amount when :

(a) P = 2600, R = 5%, T 8 months

$= \frac{8}{12}$month $= \frac{2}{3}$year

Interest $= \frac{P \times R \times T}{100}$

$= \frac{2600 \times 5 \times 8}{100 \times 3} = \frac{26 \times 40}{3}$

$= \frac{1040}{3} = 346.66$

Amount = Interest + P = ₹ 346.66 + ₹ 2600 = **₹ 2946.66**

(b) P = 20,000, R = $6\frac{1}{2}$%, T = 5year

Interest (I) $= \frac{P \times R \times T}{100}$

$= \frac{20{,}000 \times 13 \times 5}{100 \times 2} = \frac{200 \times 65}{2}$

$= 100 \times 65 = 6500$

Amount = Interest + P = ₹ 6500 + ₹ 20,000 = **₹ 26500**

(c) P = 6000, R = 10,

$T = 4\frac{1}{2}$year $= \frac{9}{2}$year

Interest $= \frac{P \times R \times T}{100}$

$= \frac{6000 \times 10 \times 9}{100 \times 2} = \frac{60 \times 90}{2}$

$= 30 \times 90 =$ ₹ 2700

Amount = Interest + P = ₹ 2700 + ₹ 6000 = ₹ **8700**

(d) P = 1800, R = 8%, T = $6\frac{1}{2}$ year

$= \frac{13}{4}$ year

Interest (I) $= \frac{P \times R \times T}{100}$

$= \frac{1800 \times 8 \times 13}{100 \times 2}$

$= 18 \times 4 \times 13 = 18 \times 52 =$ ₹ 936

Amount = Interest + P = ₹ 936 + ₹ 1800 = ₹ **2736**

(e) P = 1500, r = 5%, T = 3 months

$= \frac{3}{12} = \frac{1}{4}$year

Interest $= \frac{P \times R \times T}{100}$

$= \frac{1500 \times 5 \times 1}{100 \times 4} = \frac{15 \times 5}{4}$

$= \frac{75}{4} = 18.75$

Amount = Interest + P = ₹ 18.75 + ₹ 1500 = ₹ **1518.75**

(f) P = 2800, R $10\frac{1}{2}\% = \frac{21}{2}\%$,

T = 9years

Interest $= \frac{P \times R \times T}{100}$

$= \frac{2800 \times 21 \times 9}{100 \times 2} = \frac{28 \times 189}{2}$

$= 14 \times 189 =$ ₹ 2646

Amount = Interest + P

= ₹ 2646 + ₹ 2800 = ₹ **5446**

4. P = 1000, R = 9%, T = 4year

Interest $= \frac{P \times R \times T}{100} = \frac{1000 \times 9 \times 4}{100}$

$= 10 \times 36 =$ ₹ 360

Amount = Interest + P = ₹ 360 + ₹ 1000

= ₹ **1360**

5. P = ₹45000, T = 8 months $= \frac{8}{12} = \frac{2}{3}$ year, R = 7.5%

Interest $= \frac{P \times R \times T}{100}$

$= \frac{45000 \times 7.5 \times 2}{100 \times 3} = \frac{450 \times 15.0}{3}$

$= 450 \times 5 =$ ₹ 2250

Amount = Interest + ₹ P 2250 + ₹ 45000 = ₹ **47250**

6. P = ₹5675, R = $4\frac{1}{3}\% = \frac{13}{3}\%$,

T = 8.5year

Interest $= \frac{P \times R \times T}{100}$

$= \frac{5675 \times 13 \times 8.5}{100 \times 3} = \frac{56.75 \times 110.5}{3}$

7. P = ₹3550, R = $9\frac{1}{2}\% = \frac{19}{2}\%$, T = 5 months $= \frac{5}{12}$year

Interest $= \frac{P \times R \times T}{100}$

$= \frac{3550 \times 19 \times 5}{100 \times 2 \times 12} = \frac{1775 \times 19}{20 \times 12}$

8. P = ₹4250, R = 7%, T = $5\frac{1}{2}$ year

$= \frac{11}{2}$ year

Interest $= \frac{P \times R \times T}{100}$

$= \frac{4250 \times 7 \times 11}{100 \times 2} = \frac{2125 \times 77}{100}$

$= 21.25 \times 77 =$ ₹ 1636.25

Amount = Interest + P

= ₹ 1636.25 + ₹ 4250 = ₹ **5886.25**

9. P = ₹15000, R = $8\frac{1}{2}\% = \frac{17}{2}\%$,

T = 6 year

Interest = $\frac{P \times R \times T}{100}$

$= \frac{15000 \times 17 \times 6}{100 \times 2} = 150 \times 17 \times 3$

$= 150 \times 51 =$ ₹ **7650**

Chapter-15 (Average)

1. Find the average of :

(a) First five odd numbers

Average = $\frac{\text{Total sum of numbers}}{\text{Total Numbers}}$

$= \frac{1+3+5+7+9}{5} = \frac{25}{5} = \mathbf{5}$

(b) First 4 two-digit numbers

Average

$= \frac{\text{Total sum of numbers}}{\text{Total Numbers}}$

$= \frac{10+11+12+13}{4} = \frac{46}{4} = \mathbf{11.5}$

(c) First 7 counting numbers

$= \frac{\text{Total sum of numbers}}{\text{Total Numbers}}$

$= \frac{1+2+3+4+5+6+7}{7}$

$= \frac{28}{7} = \mathbf{4}$

(d) First 4 even numbers

$= \frac{\text{Total sum of numbers}}{\text{Total Numbers}}$

$= \frac{2+4+6+8}{4} = \frac{20}{4} = \mathbf{5}$

2. Find the average of the following set of numbers :

(a) Average = $\frac{\text{Total sum of numbers}}{\text{Total Numbers}}$

$= \frac{85+80+70+75+65+60}{6}$

$= \frac{435}{6} = \mathbf{7\ 2.5}$

(b) Average = $\frac{\text{Total sum of numbers}}{\text{Total Numbers}}$

$= \frac{25+17+30+16+22}{5}$

$= \frac{110}{5} = \mathbf{22}$

(c) Average = $\frac{\text{Total sum of numbers}}{\text{Total Numbers}}$

$= \frac{14+22+18+16}{4} = \frac{70}{4} = \mathbf{17.5}$

(d) Average = $\frac{\text{Total sum of numbers}}{\text{Total Numbers}}$

$= \frac{24+34+57}{3} = \frac{115}{3}$ **38.33**

3. Average distance per day covers by train = 560 km

Thus, average distance which he covers in 9 days = 560 km × 9 = **5040 km**

4. Age of 5 children = (4, 5, 9, 11, 13)year

Thus, Average age

$= \frac{\text{Sum of ages of children}}{\text{Numbers of children}}$

$= \frac{4+5+9+11+13}{5} = \frac{42}{5} =$ **8.4year**

5. Income of a man in five days = (48.50, 70, 62, 78, 64)

Thus, Average Income

$= \frac{\text{Sum of Income}}{\text{Numbers days of income}}$

$= \frac{48.50+70+62+78+64}{5}$

$= \frac{322.50}{5} = \mathbf{64.50}$

6. Average of runs in 5 matches by Harit's cored = 75runs

Thus, he scored altogether = 75 × 5 = 365runs

7. Score of Harit in 5 matches = 78, 56, 2, 86 and 138.

Thus, Average core

$= \frac{\text{Sum of scores}}{\text{Numbers of matches}}$

$$= \frac{78 + 56 + 2 + 86 + 138}{5}$$

$$= \frac{260}{5} = \mathbf{52}$$

8. Heights of 6 girls in a class = 146cm, 152cm, 156cm, 155cm, 144cm,158cm.

Thus, Average height of girls

$$= \frac{\text{Sum of girls height}}{\text{Numbers of girls}}$$

$$= \frac{(146 + 154 + 56 + 155 + 144 + 158)}{6}$$

$$= \frac{911}{6} = \mathbf{151.85}$$

9. (a) (i) (b) (iii) (c) (iii) (d) (i)

Chapter-16 (Speed, Distance and Time)

1. Find the speed :

(a) Distance (D) of bird flies = 18km

Time (T) = 36 hours

Thus, Speed (S) $= \frac{D}{T} = \frac{18}{36} = \frac{1}{2}$

= **0.5km/hr**

(b) A man distance of walking = 16km

Time = 2h

Thus, Speed (S) $= \frac{D}{T} = \frac{16}{2}$

= **8km/h.**

(c) Speed (S) $= \frac{D}{T} = \frac{60}{1} =$ **60km/h.**

(d) Distance covers by aeroplane = 1800km

Time = 3 hours

Thus, Speed $= \frac{D}{T} = \frac{1800}{3}$

= **600km/hr.**

(e) Distance covers by a cyclist = 32km

Time = 4 hours

Thus, Speed (S) $= \frac{D}{T} = \frac{32}{4}$

= **8km/hr**

2. Distance covers by a train = 460km

Time = 6 hours 20 minutes

Speed (S) $= \frac{D}{T} = \frac{460}{6 + \frac{20}{60}} = \frac{460}{6 + \frac{1}{3}}$

$$= \frac{460}{\frac{19}{3}} = \frac{460 \times 3}{19} = \frac{1380}{19} = \mathbf{72.63}$$

3. Distance covers by bus = 640km

Time = 8 hours

Speed (S) $= \frac{D}{T} = \frac{640}{8} =$ **80 km/hr.**

4, 5. Do yourself

6. Distance covered by train = 80 km

Time taken = 1hr. 20m $= 1 + \frac{20}{60} = \frac{4}{3}$ hr

Thus, Speed $= \frac{D}{T} = \frac{80}{\frac{4}{3}} = \frac{80 \times 3}{4}$

$$= \frac{240}{4} = \mathbf{60km/hr.}$$

7. Express each of the following speed in km/hr :

1km = 1000m and 1 hour = 3600sec

1m $= \frac{1}{1000}$m and 1min $= \frac{1}{60}$hr

and 1sec $= \frac{1}{3600}$hr.

(a) Speed $= \frac{14m}{1\text{sec}} = \frac{14 \times \frac{1}{1000}}{1 \times \frac{1}{3600}}$ km/hr

$$= \frac{14 \times 3600}{1000} = 40 \times 3.6$$

= **50.4 km/hr.**

(b) Speed $= \frac{80m}{1\text{sec}} = \frac{80 \times \frac{1}{1000}}{1 \times \frac{1}{3600}}$ km/hr.

$$= \frac{80 \times 3600}{1000} = 80 \times 3.6 = \mathbf{288.0}$$

(c) Speed $= \frac{58m}{1\text{sec}} = \frac{58 \times \frac{1}{1000}}{1 \times \frac{1}{3600}}$ k/h

$= \frac{58 \times 3600}{1000} = \frac{58 \times 36}{10}$

$= 5.8 \times 36 =$ **208.8km/hr.**

(d) Speed $= \frac{5m}{1\text{sec}} = \frac{5 \times \frac{1}{1000}}{1 \times \frac{1}{3600}}$ km/hr

$= \frac{5 \times 3600}{1000} = 5 \times 3.6$

= **18.0 km/hr.**

(e) Speed $= \frac{18m}{1\text{sec}} = \frac{18 \times \frac{1}{1000}}{1 \times \frac{1}{3600}}$ km/hr

$= \frac{18 \times 3600}{1000}$

$= 18 \times 3.6 =$ **64.8 km/hr**

(f) Speed $= \frac{24m}{1\text{sec}} = \frac{24 \times \frac{1}{1000}}{1 \times \frac{1}{3600}}$ km/hr

$= \frac{24 \times 3600}{1000} = 24 \times 3.6 =$ **86.4**

8. Do yourself

Exercise Time - 16.2

1. Complete the tables :

(a) Time $= \frac{\text{Distance}}{\text{Speed}}$

(i) Distance = 140 km

Speed = 15 km/hr.

(Complete the table yourself)

Time $= \frac{140}{15} =$ **9.33**

(b) Solved : Distance = Speed × Time

(i) Speed = 60km/h Time = 4 hours.

Distance = 60 × 4 = 240 km

Complete the table yourself

2. Solved Speed of train = 80km Time = 6 hr.

Distance = Speed × Time = 80 × 6

= **480 km**

3. Speed of car = 70km/hr.

Distance cover = 380 km

Time $= \frac{\text{Distance}}{\text{Speed}} = \frac{380}{70} =$ **5.4285**

4. Speed of van to move = 65km/hr.

Time taken to reach destination = 9hr.

Distance cover by van = Speed × Time

= 65 × 9 = **405 km.**

5. Distance covered by a bus = 780 km

Speed for the distance = 60km/hr.

Time taken by the bus $= \frac{D}{S} = \frac{780}{60}$

= **13km/hr.**

6. Time of boys reaching his school = 50m.

Speed = 2.5 km/hr

The school distance from his house

= Speed × Time

$= 50 \times \frac{1}{1000} \times 2.5$km

$= \frac{50 \times 1 \times 2.5}{1000}$ km $= \frac{125.0}{1000}$

= **0.0125 km**

Chapter-17 (Lines and Angles)

Exercise Time - 17.1

1. (a) ray (b) line segment (c) line

2. line segment

3. Do yourself

4. Do yourself

5. (a) vertical line (b) curved line

(c) slant line (d) Intersecting line

(e) wavy line

Exercise Time - 17.2

1. (a) acute (b) reflex (c) 90 (d) straight

2. Do yourself

3. Do yourself

4. Do yourself

Exercise Time - 17.3

1. (a) Adjacent angles

(b) vertically opposite angles

(c) alternate angles

2. (a) $\angle L = \angle R$

(b) no opposite angles

(c) $\angle E$ and $\angle P$, $\angle G$ and $\angle Q$

3. (c) 115°, 65° (d) 90°, 90° (e) 88°, 92°

4. (a) (i) (b) (iv) (c) (iv)(d) (ii)

Chapter-18 Triangles and Quadrilaterals

Exercise Time - 18.1

1. Find the missing angle of the given triangles :

The sum of the three angles of a triangle is always 180° :

(a) $\angle XYZ = 80°, \angle Y \times Z = 70°$

Hence, $\angle XZY = 180°$

$- (\angle XYZ + \angle Y \times Z)$

$= 180° - (80° + 70°)$

$= 180° - 150°$

$= 30°$

Do yourself all like that.

2., 3., 4. Do yourself

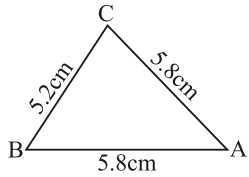
Exercise Time - 18.2

1. Construct these triangles and write steps of construction :

(a) Step of construction

1. Draw a line CA = 6cm

2. Draw two arcs of radii 5.2cm and 5.8cm with the centres at C and A respectively.



Let these arcs intersect at B.

Join AB and BC by line segments.

Then, ABC is required triangle

Do yourself all like that.

Exercise Time - 18.3

1. Find the missing angles for given quadrilaterals :

The sum of the angles of a quadrilateral is 360°.

(a) $\angle LMN = 80°, \angle MNO = 90°,$

$\angle NOL = 80°$

Hence, $\angle OLM = 360°$

$- (\angle LMN + \angle MNO + \angle NOL)$

$= 360° - (80° + 90° + 80°)$

$= 360° - 250° = 110°$

Do yourself all like that.

2. Do yourself

3. Do yourself

Chapter-19 (Circles)

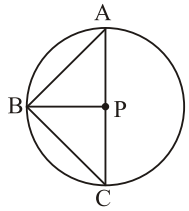
1. With the help of the figure write the name of the following :

(a) Centre = P

(b) diameter = AC

(c) Radii = CP, AP, BP

(d) Chord = AB, BC



2. Do yourself

3. Find the diameter of these circles, if the radius are :

Diameter = 2 × radius

(a) Diameter = 2 × 6.6cm = **13.2cm**

(b) Diameter = 2 × radius

Radius = 16cm

Hence, Diameter = 2 × 16cm

= 12cm

Radius = 16cm

Hence Diameter = 2 × 16cm

= **32cm**

(d) Diameter = 2 × 23cm = **46cm**

(e) Diameter = 2 × 18.5cm = **37.0cm**

(f) Diameter = 2 × 14.5cm = **29.0cm**

4. Find the radius of these circles, if the diameter is :

Radius = $\frac{1}{2}$ of diameter

(a) Diameter = 13cm

Hence, Radius = $\frac{1}{2} \times 13 = \frac{13}{2}$

= **6.5cm**

(b) Diameter = 17cm

Hence, Radius = $\frac{1}{2} \times 17$ = **8.5cm**

(c) Diameter = 14cm

Hence, Radius = $\frac{1}{2} \times 14$ = **7cm**

(d) Diameter = 23.5cm

Hence, Radius = $\frac{1}{2} \times 23.5$

= **11.75cm**

(e) Diameter = 26cm

Hence, Radius = $\frac{1}{2} \times 26$ = **13cm**

(f) Diameter = 43.5cm

Hence, radius = $\frac{1}{2} \times 43.5$

= **26.75cm**

5. Do yourself

Chapter-20 (Area, Perimeter and Volume)

Exercise Time - 20.1

1. Area of these rectangle are given below along with one of the sides.

Find the measure of the other side.

Area = (l) length × breadth (b)

(a) Area = $40cm^2$ = 10cm × b

b = 40 ÷ 10 = 4cm

Hence, the measure of the other side = **4cm**

(b) area = $48cm^2$, length (l) = 8cm

Thus, area = l × b

$48cm^2$ = 8cm b.

b = 48 ÷ 8 = 6cm

Hence, the measure of the other side = **6cm**

(c) Area = $18cm^2$, length (l) = 6cm

Thus, area = l × b

$18cm^2$ = 6cm ×b

b = 18 ÷ 6 = 3cm

Hence, the measure of the other side = **3cm**

(d) Area = $48cm^2$, length = 8cm

Thus, area = l ×b

$48cm^2$ = 8 × b

b = 48 ÷ 8

= **6cm**

(e) Area = $64cm^2$, length = 8cm

Thus, area = l × b

$64cm^2$ = 8 × b

b = 64 ÷ 8

= **8cm**

2. Find the area of rectangle whose :

Area of rectangle

= length (l) × breadth (b)

(a) length = 13cm, breadth = 5cm

Hence,
Area = l × b = 13cm × 5cm
= **65cm**
Do yourself all like that.

3. Length of a rectangular park = 112m
Breadth of a rectangular park = 84m
Hence, Area of park
= l × b = (112 × 84)m
= **8408m**

4. Sides of square park = 14m
Hence, Area of square park
= side × side = (14 × 14) m
= **196m**

5. Length of one room = 12m
Breadth of other room = 9.5m
Hence, area = l × b = (12 × 9.5) m
= **114.0m**
Length of other room = 10m
Breadth of other room = 8.5m
Hence, area = l × b = 10 × 8.5m
= **85.0m**
Thus, the first room whose *l* = 12 and b 9.5m is bigger than other room.

6., 7. Do yourself

Exercise Time - 20.2

1. Find the perimeter of the given figure :
Perimeter = Sum of sides
(a) Square ÷ side = 15cm
Hence,
Perimeter = 4 × side = 4 × 15
= **60cm**
(b) Rectangle : l = 16cm, b = 11cm
Hence,
Perimeter = 2 (l + b) = 2 (16 + 11)
= 2 × 27
= **54cm**
(c) Square : Side = 10cm
Perimeter = 4 × side = 4 × 10cm
= **40cm**
(d) Triangle : Sides 4cm, 5cm, 7cm
Perimeter = (4 + 5 + 7)cm
= **16cm**
(e) Rectangle = l = 24cm, b = 14cm
Hence, Perimeter = 2 (l + b)
= 2 (24 + 14)cm = 2 × 38cm
= **76cm**

2. Do yourself

3. Length of a field = 450m
Breadth of a field = 320m
Hence, P of a field = 2 (l + b) = 2
(450 + 320)m = 2 × 770m
= **1540m**
1540m length of the wire needed to fence around it.

4. Length of a field = 38m
Breadth of a field = 22m
Hence, perimeter (P) = 2 (l + b) = 2
(38 + 22)m = 2 × 60m = 12m
He has to walk = **120m**

5. Length of rectangular piece of marble = 16m
Its area = $320m^2$
Thus, area = l × b
$320m^2$ = 16m × b
Breadth (b) = 320 ÷ 16 = 20m
Perimeter (P) = 2 (l + b) = 2
(16 + 20)m = 2 × 36m
= **72m**

6. A triangles side = 16cm, 18cm, 24cm
Thus,
Perimeter = Sum of sides =
(16 + 18 + 24)m = 58m

7. (a) Perimeter = (sum of sides) +
(3.4 + 3.8 + 2 + 2.5 + 3) cm
= **14.7cm**
Do yourself b and c.

Exercise Time - 20.3

1. Find the volume of each of these cuboids :

Volume = (l × b) × h (height)

(a) Volume = (3 × 1)cm × 4cm
= 3cm × 4cm
= $12cm^2$

(b) Volume = (4 × 2)cm × 5cm
= 8cm × 5cm
= $40cm^2$

(c) Volume = (3 × 2)cm × 10cm
= 6cm × 10cm
= $60cm^2$

(d) Volume = (2 × 4)cm × 4cm
= 8cm × 4cm
= 32cm

(e) Volume = (8 × 2)cm × 3cm
= 16cm × 3cm
= 48cm

2. Length of brick = 30cm
Breadth of brick = 10cm
Height of brick = 8cm
Hence, Value = (l × b) × h
= (30 ×10)cm × 8cm
= 30 × 8cm
= **240cm**

3. Find the volume of the following cubes having sides each of :

(a) Sides = 18cm
Volume = $(18)^3$
= $5832cm^3$

(b) Sides = 5cm
Volume = $(5)^3$
= $5 \times 5 \times 5 = 125cm^3$

(c) Sides = 8.5cm
Volume = $(8.5)cm^3$
= $614.125cm^3$

(d) Sides = 16.5cm
Volume = $(16.5)^3$
= $4482.125cm^3$

(e) Sides = 9.4cm
Volume = $(9.4)^3$cm
= $830.584cm^3$

5. Length of a digs of apit = 6.5m
Breadth of a digs of a pit = 3m
Height of a digs = 1.6m
Hence, Volume = (l × b) × h
= (6.5 × 3)m × 1.6m
= 19.5 × 1.6
= **$31.20m^2$** earth is dugout from it.

6. Dimensions of ice
= 18cm × 8cm × 7cm
Side = 3cm
Number of ice-cubes

$$= \frac{18cm \times 8cm \times 7cm}{3}$$

= 6cm × 8cm × 7cm
= **336 ice-cubes**

7. Length of a ten packet = 18cm
Breadth of a ten packet = 8cm
Height of a ten packet = 6cm
Volume of a ten packet = (l × b) × h
= (18 × 8)cm × 6cm
= $144cm^2 \times 6cm^2$
= **$864cm^3$**

8. Do yourself

Chapter-21 (Temperature)

1. Do yourself

2. Convert the following to degree celsius (°C) :

$$\frac{C}{5} = \frac{F - 32}{9}$$

(a) F = 286

$$\frac{C}{5} = \frac{286 - 32}{9} \qquad \frac{C}{5} = \frac{254}{9}$$

$$C = \frac{254}{9} \times 5$$

$$C = \frac{1270}{9} = \mathbf{141.11}$$

(b) F = 2134

$$\frac{C}{5} = \frac{213 - 32}{9} \qquad \frac{C}{5} = \frac{181}{9}$$

$$C = \frac{181}{9} \times 5$$

$$C = \frac{905}{9} = 100.55$$

= **10.55°C**

(c) F = 477°F

$$\frac{C}{5} = \frac{477 - 32}{9}$$

$$\frac{C}{5} = \frac{445}{9}$$

$$\frac{C}{5} = 49.44$$

C = 49.44 × 5 = 247.20°C

(d) 94°F

$$\frac{C}{5} = \frac{94 - 32}{9} \frac{C}{5} = \frac{62}{9}$$

$$C = \frac{69}{9} \times 5$$

$$= \frac{345}{9} = \mathbf{38.33°C}$$

(e) 98.6°F

$$\frac{C}{5} = \frac{98.6 - 32}{9}$$

$$\frac{C}{5} = \frac{66.6}{9}$$

$$C = \frac{66.6}{9} \times 5$$

$$= \frac{333.0}{9} = \mathbf{37°C}$$

(f) 170°F

$$\frac{C}{5} = \frac{970 - 32}{9}$$

$$\frac{C}{5} = \frac{138}{9}$$

$$C = \frac{138}{9} \times 5$$

$$C = \frac{690}{9} = \mathbf{76.66°C}$$

3. Convert the following to degree Fahrenheit (F) :

$$F = \frac{9}{5} \times C + 32$$

(a) 15°C

$$F = \frac{9}{5} \times 15 + 32 = 9 \times 3 + 32$$

= 27 + 32

= **59°F**

(b) 30°C

$$F = \frac{9 + 32}{5} \times 30 = 9 \times 6 + 32$$

= 15 + 32

= **47°F**

(c) 100°C

$$F = \frac{9}{5} \times 100 + 32 = 9 \times 20 + 32$$

= 180 + 32

= **212°F**

(d) 40°C

$$F = \frac{9}{5} \times 40 + 32 = 9 \times 8 + 32$$

= 72 + 32

= **104°F**

(e) 35°C

$$F = \frac{9}{5} \times 35 + 32 = 9 \times 9 + 32$$

= 18 + 32

= **40°F**

(f) 90°C

$$F = \frac{9}{5} \times 90 + 32 = 9 \times 18 + 32$$

= 162 + 32

= **194°F**

4. The temperature of an object = 35°C

The temperature of another object

= 35°F

Thus, in Fahrenheit the temperature of an object = F = $\frac{9}{5} \times C + 32$

$= \frac{9}{5} \times 35 + 32 = 9 \times 7 + 32$

$= 63 + 32$

= **95°F**

Hence, the temperature of 35°C object is hotter of 95°F than other

5. Maximum temperature in a day = 45°C

Minimum temperature in a day = 18°C

Thus, the difference in Fahrenheit scale, 45°C – 18°C

$F = \left(\frac{9}{5} \times 45 + 32\right) - \left(\frac{9}{5} \times 18 + 32\right)$

$(9 \times 9 = 32) - (9 \times 2.8 + 32)$

$(81 + 32) - (25.2 + 32)$

$113 - 57.2$

= **55.8°F**

6. Do yourself

Chapter-22 Pictorial of Representation Data

Do yourself