Magic Mathmatics (Book-5)

Chapter 1 : Bigger Numbers

Exercise - 1.1

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

    a) >   b) >   c) >   d) <   e) <   f) <

2. **Arrange the following in ascending order :**

    a) 295227, 718659, 817442

    b) 504797, 524999, 548378, 594872

    c) 4695227, 7184659, 8178042

    d) 5234378, 5464999, 5477997, 5484572

3. **Arrange the following in descending order :**

    a) 587649, 328589, 325529

    b) 974829, 778720, 735827

    c) 5864149, 3252529, 2857489

    d) 4297829, 4278720, 4277727, 4273827

4. **Write each of the following numbers in words :**

    a) Thirty four lakh twenty six thousand and five.

    b) Ninety two lakh forty two thousand six hundred and two.

    c) Five crore eighty seven thousand two hundred thirty eight.

    d) Ninety seven lakh forty three thousand two hundred sixty six.

    e) Fifty three lakh ninety six thousand seven hundred forty two

    f) Twenty eight lakh twenty thousand five

5. **Write the following numbers in the short form :**

    a) 3677630   b) 8084335

    c) 9005080   d) 7045845

6. **Build the smallest and the greatest number using the digits only once :**

	Greatest number	Smallest number
a)	85320	20358
b)	95210	10259

7. **Give the expanded notation of the following numbers :**
   a) $30000000 + 1000000 + 900000 + 40000 + 100 + 50 + 6$
   b) $900000 + 80000 + 5000 + 300 + 3$
   c) $5000000 + 600000 + 30000 + 9000 + 800 + 70 + 4$
   d) $60000000 + 4000000 + 30000 + 100 + 40 + 7$

8. **Look at the pattern and write the next three numbers :**
   a) 5,32,000; 6,32,000; 7,32,000
   b) 56,72,815 ; 57,72,815; 58,72,815
   c) 5,14,88,651; 5,14,89,651; 5,14,90,651

9. **Write the following numbers in figures :**
   a) 50200059   b) 2715642
   c) 80725900   d) 5208492

10. **Make the largest and the smallest 6-digit numbers using each digit only once :**
   a) 876341, 143678   b) 987421, 124789
   c) 976510, 105679

11. **Make the largest and the smallest 7-digit numbers using each digit only once :**
   a) 8654321, 1234568   b) 9764321, 1234679
   c) 9876320, 2036789

12. **Make the largest and the smallest 6-digit numbers using the given digits. You may repeat the digits :**
   a) 7777777, 111111   b) 999999, 111111
   c) 888888, 100000

13. **Make the largest and the smallest 7-digit numbers using the given digits. You many repeat the digits :**
   a) 7777777, 1111111   b) 9999999, 1111111
   c) 9999999, 200000

Exercise-1.2

1. **Round the following numbers to the nearest tens :**
   a) 532260   b) 743850
   c) 2436780   d) 9758250

2. **Round the following numbers to the nearest hundreds :**
   a) 854700   b) 976900
   c) 7258500   d) 7469800
3. **Round the following numbers to the nearest thousands :**
   a) 824000   b) 737000
   c) 7521000   d) 9737000
4. **Round the following numbers to the nearest ten thousands :**
   a) 870000   b) 250000
   c) 7520000   d) 9740000
5. **Round the following numbers to the nearest lakhs :**
   a) 100000   b) 800000
   c) 7800000   d) 4000000
6. **Round the following numbers to the nearest ten lakhs :**
   a) 6000000   b) 9000000
   c) 5000000

Exercise-1.3

1. **Write the following numbers in the International place value chart :**

	Billions			Millions			Thousands		Ones		
	Hundred Billions	Ten Billions	Billions	Hundred Millions	Ten Millions	Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones
a)						6	8	9	3	5	2	6
b)					7	1	5	2	8	6	1	0
c)					6	7	8	9	3	8	2	8
d)					1	2	3	5	6	4	9	8
e)				6	7	8	3	1	6	2	1	8
f)					1	2	0	0	9	8	1	6
g)				3	2	1	0	7	7	8	6	1
h)					2	9	5	3	8	1	0	9

2. **Separate into periods according to the International system of numeration :**
   a) 5,123,618   b) 3,365,128
   c) 81,987,619   d) 72,289,369
   e) 783,693,607   f) 78,931,086
   g) 41,627,913   h) 36,481,293

3. **Give number names for the following numerals according to the International system of numeration :**

a) Seventy one million six hundred seventy two thousand eight hundred ninety six

b) Seventy six million one hundred eighty nine thousand three hundred sixty nine

c) Sixty seven million six hundred ninety three thousand one hundred sixty nine

d) One hundred twenty three million four hundred fifty six thousand seven hundred eighty nine

e) Seventy million five hundred sixty one thousand eight hundred seventy six

f) Seventy nine million one hundred two thousand nine hundred thirty four

g) Five hundred seventy five million eight hundred twelve thousand nine hundred thirty

h) Two hundred seventy million fifty six thousand seventy five.

4. **Write the following numbers in figures :**

a) 56000000   b) 25002305

c) 5002036   d) 62000205

e) 23036506

Exercise-1.4

1. **Write the following in Roman numerals :**

a) LV   b) XLIII   c) LXVII

d) LXXIX   e) LXXXVII   f) XCVI

g) XCIX   h) C

2. **Write the following in Hindu-Arabic numerals :**

a) 42   b) 29   c) 91

d) 43   e) 77   f) 88

g) 49   h) 92

3. **Compare the following using '<', '>' or '=' in boxes :**

a) <   b) >   c) <   d) >

Chapter 2 : Addition and Subtraction

Exercise-2.1

1. **Add :**

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

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

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

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

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

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

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

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

2. **Write in columns and then add :**

Putting the digits of the given numbers in the column form and then adding columnwise, we get :

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

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

(c)

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

(d)

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

(e)

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

3.   First candidates got the votes   = 551250

   Second candidates got the votes   = 614106

   Third candidates got the votes   = 603944

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

   Then total number of votes got   = 1769300

   Hence, total number of votes polled = 1769300 + 2576

               = 1771876

4.   Onions produced in Ist year   = 927507 tonnes

   Onions produced in IInd year = 476246 tonnes

   Onions produced in IIIrd year = 716402 tonnes

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

   Then, total onions produced

   in three year   = 2120155 tonnes

5.   Number of Male teachers in government school = 3276788

   Number of female teacher in government school = 2112901

   Number of male and female teachers in private

   schools   = 1674536

   Total population of teachers   = 7064225

   Hence, 7064225 teachers are in our country.

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

6.   Population of city X in 2011   = 2752473

    Population of city Y in 2011   = 3168912

    Population of city Z in 2011   = 3805694

    Total population   = 9427079

```
  2752473
  3168912
+ 3805694
 (9727079)
```

    Hence, the population of three cities are 9727079.

7.   The number of visitors in Ist year   = 927197

```
  927197
 1235237
+1127543
(3290977)
```

    The number of visitors in IInd year = 1235237

    The number of visitors in IIIrd year = 1127543

    Total number of visitors in three years = 3290977

    Hence, 3290977 visitors visited Taj Mahal in three years.

8.   The profit of company in year 2012 = ₹1612876

```
 1612876
 2431980
+2625193
(6670049)
```

    The profit of company in year 2013 = ₹2431980

    The profit of company in year 2014 = ₹2625193

    Total profit of the company = ₹6670049

    Hence, the profit of the company in three year is ₹6670049.

9.   Production of rice in tonnes   = 6607657

```
  6607657
 +7579102
(14186759)
```

    Production of wheat in tonnes = 7579102

    Total production   = 14186759

    Hence, total production of the state is 14186759 tonnes.

10. The population of men in country   = 25147638

```
 25147638
 15769298
 +2627698
(43544634)
```

    The population of women in country = 15769298

    The population of children in country= 2627698

    Total population in the country   = 43544634

    Hence, the total population of the country is 43544634

Exercise-2.2

1. Subtract :

(a)
$$\begin{array}{r} \boxed{5}\boxed{13}\boxed{11}\\ 6\,4\,1\,7\,4\,6\\ -\;5\,6\,5\,4\,2\,4\\ \hline 7\,6\,3\,2\,2 \end{array}$$

(b)
$$\begin{array}{r} \boxed{7}\boxed{10}\boxed{13}\\ 8\,1\,3\,3\,5\,1\\ -\;4\,8\,7\,2\,2\,0\\ \hline 3\,2\,6\,1\,3\,1 \end{array}$$

(c)
$$\begin{array}{r} \boxed{8}\boxed{13}\quad\boxed{7}\boxed{16}\\ 9\,3\,5\,9\,8\,6\\ -\;6\,4\,4\,8\,5\,7\\ \hline 2\,9\,1\,1\,2\,9 \end{array}$$

(d)
$$\begin{array}{r} \boxed{13}\boxed{14}\\ 6\,1\,4\,4\,9\,7\,7\\ +\;1\,0\,4\,7\,5\,6\,4\\ \hline 5\,0\,9\,7\,4\,1\,3 \end{array}$$

(e)
$$\begin{array}{r} \boxed{8}\boxed{17}\boxed{5}\boxed{9}\boxed{14}\\ 1\,9\,6\,9\,7\,6\,0\,4\\ -\;1\,7\,0\,0\,9\,5\,7\,6\\ \hline 2\,6\,8\,8\,0\,2\,8 \end{array}$$

(f)
$$\begin{array}{r} \boxed{2}\boxed{17}\boxed{0}\boxed{14}\boxed{9}\boxed{12}\\ 6\,9\,3\,7\,1\,5\,0\,2\\ -\;6\,3\,1\,9\,0\,8\,7\,4\\ \hline 6\,1\,8\,0\,6\,2\,8 \end{array}$$

(g)
$$\begin{array}{r} \boxed{8}\boxed{14}\boxed{10}\boxed{18}\boxed{11}\\ 9\,6\,9\,5\,1\,9\,1\,6\,4\\ -\;7\,1\,7\,6\,2\,9\,9\,4\,3\\ \hline 2\,5\,1\,8\,8\,9\,2\,2\,1 \end{array}$$

(h)
$$\begin{array}{r} \boxed{6}\boxed{15}\boxed{13}\boxed{11}\boxed{13}\\ 7\,7\,6\,4\,2\,3\,3\,9\,9\\ -\;3\,5\,6\,8\,8\,6\,2\,0\,2\\ \hline 4\,1\,9\,5\,3\,7\,1\,9\,7 \end{array}$$

2. Write in the columns and find the difference :

(a)
$$\begin{array}{r} 6\,1\,9\,2\,3\,4\\ +\;2\,0\,8\,1\,3\,0\\ \hline 4\,1\,1\,1\,0\,4 \end{array}$$

(b)
$$\begin{array}{r} \boxed{1}\boxed{13}\boxed{4}\boxed{12}\boxed{7}\boxed{18}\boxed{18}\\ 2\,3\,5\,2\,8\,9\,8\\ -\;1\,4\,4\,9\,6\,9\,9\\ \hline 9\,0\,3\,1\,9\,9 \end{array}$$

(c)
$$\begin{array}{r} \boxed{6}\boxed{9}\boxed{16}\boxed{9}\boxed{9}\boxed{9}\boxed{10}\\ 7\,0\,7\,0\,0\,0\,0\\ -\;6\,1\,9\,6\,9\,6\,3\\ \hline 8\,7\,3\,0\,3\,7 \end{array}$$

(d)
$$\begin{array}{r} \boxed{3}\boxed{11}\quad\boxed{2}\boxed{12}\quad\boxed{8}\boxed{13}\\ 4\,1\,9\,3\,2\,5\,9\,3\\ -\;4\,9\,1\,5\,0\,7\,6\\ \hline 3\,7\,0\,1\,7\,5\,1\,7 \end{array}$$

(e)
$$\begin{array}{r} \overset{6}{6}\,\overset{16}{7}\,\overset{16}{7}\,\overset{12}{7}\,2\,7\,9\,\overset{6}{7}\,\overset{17}{7} \\ -\,2\,8\,9\,5\,3\,9\,5\,9 \\ \hline \fbox{$6\,4\,8\,7\,7\,4\,0\,1\,8$} \end{array}$$

3. The number which to be added to get 843563, we subtract 567834 from 846563. Then

$$\begin{array}{r} \overset{7}{8}\,\overset{13}{4}\,\overset{12}{3}\,\overset{15}{5}\,\overset{5}{6}\,\overset{13}{3} \\ -\,5\,6\,7\,8\,3\,4 \\ \hline \fbox{$2\,7\,5\,7\,2\,9$} \end{array}$$

Hence, the required number is 275729.

4. to find the requir4ed number, we subtract 61987568 from 83134252.

$$\begin{array}{r} \overset{2}{8}\,\overset{10}{3}\,\overset{12}{1}\,\overset{13}{3}\,\overset{11}{4}\,\overset{14}{2}\,\overset{12}{5}\,2 \\ -\,6\,1\,9\,8\,7\,5\,6\,8 \\ \hline \fbox{$2\,1\,1\,4\,6\,6\,8\,4$} \end{array}$$

Hence, the number 21146684 should be subtract to get 61987568.

5. **Evaluate :**

   (a) $2421768 - 149868 = 923600$

   (b) $98430081 - 25697884 = 73232197$

   (c) $78386196 - 53995669 = 24390527$

6. **Simplify :**

   (a) $67812389 - 12626121 + 21238161$
   $$= 89050550 - 12626121 = 76424429$$

   (b) $66123816 + 100023 - 61035216$
   $$= 66223839 - 61035216 = 5188623$$

   (c) $743528619 - 1116208 - 11410 = 742412411 - 11410$
   $$= 742401001$$

7. The sum of two number $= 2754605$

   First number $= 987953$

   The second number $= 2754605 - 987953$
   $$= 1766652$$

   Hence, the second number is 1766652.

8. The difference of two number $= 2576190$

One number $= 7175460$

The other number $= 7175460 - 2576190$

$= 4599270$

Hence, the other number is 459970.

9. A company produced toys in year 2013 $= 21976193$

A company produced toys in year 2014 $= 21796194$

The company produced more toys $= 2197693 - 21796194$

$= 179999$

Hence, company produced 79999 more toys in year 2014.

10. Total population of town $= 475989$

The number of men $= 160190$

The number of women $= 100570$

The number of children $= 475989 - 160190 - 100570$

$= 475989 - 60760$

$= 215229$

Hence, the number of children is 215229.

11. The sum of two number $= 459693478$

The first number $= 356547568$

The second number $= 459693478 - 356547568$

$= 103145910$

hence, the second number is 103145910.

12. The sum of 112867812 and 32862619 $= 12867812 + 32861619$

$= 45729431$

To find the required number, we subtract 45729431 from 98386186.

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

Hence, the required number is 52656755.

13. A business man total spent $= ₹73561610$

He spent in machines and land $= ₹46575000$

A businessman spent in construction $= ₹73561610 - ₹46575000$

$= ₹26986610$

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

Hence, businessman spent ₹26986610 in building construction.

14. A cloth mill produced cloth in year 2013　＝246054320 m

    A cloth mill produced cloth in year 2014　＝343526140 m

    　　The required cloth　＝343526140 m－246054320 m

    　　　　　　　＝97471820 m

    Hence, cloth mill produced 97471820 m less cloth in year 2013.

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

15. The greatest 8-digit number　＝99999999

    The greatest 7-digit number　＝9999999

    To find the required number, we subtract 9999999 from 99999999.

$$\begin{array}{r} 9\,9\,9\,9\,9\,9\,9\,9 \\ -\,9\,9\,9\,9\,9\,9\,9 \\ \hline 9\,0\,0\,0\,0\,0\,0\,0 \end{array}$$

hence, we must be added 90000000 to get greatest 8-digit number.

Chapter 3 : Multiplication

Exercise-3.1

1. **Fill in the blanks using the properties of multiplication :**

   (a) 5　　(b) 30　　(c) 1　　(d) 0　　(e) 9　　(f) 82, 108

   (g) 556200　　(h) 2132

2. **Find the products :**

   (a)　284×10　＝2840

   (b)　$1056 \times 20 = 1056 \times 2 \times 10$

   　　　　　$= 2112 \times 10 = 21120$

   (c)　4956×300　$= 44956 \times 3 \times 100$

   　　　　　$= 14868 \times 100$

   　　　　　$= 1486800$

(d) 4158×500 $= 4158 \times 5 \times 100$
$= 20790 \times 100$
$= 2079000$

(e) 7045×6000 $= 7045 \times 6 \times 1000$
$= 42270 \times 1000$
$= 42270000$

(f) 9999×8000 $= 9999 \times 8 \times 1000$
$= 79992 \times 1000$
$= 79992 \times 1000$
$= 79992000$

3.   Multiply the following orally :

(a)   49 by 30 $= 49 \times 30$
$= 49 \times 3 \times 10$
$= 147 \times 10 = 1470$

(b)   748 by 200 $= 748 \times 200$
$= 748 \times 2 \times 100$
$= 1496 \times 100 = 149600$

(c)   1568 by 1000 $= 1568 \times 1000$
$= 1568000$

(d) 20695×6000 $= 20695 \times 6 \times 1000$
$= 124170 \times 1000$
$= 124170000$

4.   Find the following products by using suitable grouping :

(a) $5 \times 85 \times 2$ $= (5 \times 2) \times 85$
$= 10 \times 85 = 850$

(b) $8 \times 36 \times 25$ $= (8 \times 25) \times 36$
$= 200 \times 36$
$= 2 \times 100 \times 36$
$= 72 \times 100 = 7200$

(c) $2056 \times 45 \times 4$ $= 2056 \,(125 \times 4)$
$= 2056 \times 500$
$= 2056 \times 5 \times 100$

$$= 10280 \times 100 = 1028000$$

(d) $476 \times 200 \times 50 = 476 \times (200 \times 50)$
$$= 476 \times 1000$$
$$= 476000$$

5. Fill in the blanks :

(a) 40,   (b) 800, 5   (c) 800, 70   (d) 90, 6

Exercise - 3.2

1. Multiply :

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

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

(c)
```
    7 0 5 9
  ×   6 5 6
    4 2 3 5 4
  3 5 2 9 5 2
  4 2 3 5 4 0 0
 (4 6 3 0 7 0 4)
```

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

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

(f)
```
    1 7 3 4
  × 9 5 2 6
    1 0 4 0 4
    3 4 6 8 0
    8 6 7 0 0 0
  1 5 6 0 6 0 0 0
 (1 6 5 1 8 0 8 4)
```

(g)
```
    2 1 6 3
  × 7 4 9 5
    1 0 8 1 5
    1 9 4 6 7 0
    8 6 5 2 0 0
  1 5 1 4 1 0 0 0
 (1 6 2 1 1 6 8 5)
```

(h)
```
    8 0 1 6 3
  ×   5 2 1 4
    3 2 0 6 5 2
    8 0 1 6 3 0
  1 6 0 3 2 6 0 0
  4 0 0 8 1 5 0 0 0
 (4 1 7 9 6 9 8 8 2)
```

(i)
```
      8 0 0 3 2
    ×   6 0 5 9
    ─────────────
      7 2 0 2 8 8
    4 0 0 1 6 0 0
    0 0 0 0 0 0 0
  4 8 0 1 9 2 0 0 0
  ─────────────────
  ( 4 8 4 9 1 3 8 8 8 )
```

2. Write in columns and find the products :

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

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

Hence, $3359 \times 213 = 715467$ Hence, $5908 \times 346 = 2044168$

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

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

Hence, 2563×314 Hence, 6254×9408
   $= 21308782$ $= 58837632$

(e)
```
      5 0 0 8 2
    ×     9 5 3
    ─────────────
      1 5 0 2 4 6
    2 5 0 4 1 0 0
  4 5 0 7 3 8 0 0
  ───────────────
  ( 4 7 7 2 8 1 4 6 )
```

(f)
```
      6 3 2 9 7
    ×   1 2 5 8
    ─────────────
      5 0 6 3 7 6
    3 1 6 4 8 5 0
  1 2 6 5 9 4 0 0
  6 3 2 9 7 0 0 0
  ───────────────
  ( 7 9 6 2 7 6 2 6 )
```

Hence, 50082×953 Hence, 63297×1258
   $= 47728146$ $= 79627626$

3. Find the continued product of the following :

(a) First we multiply 315 by 36.

```
    3 1 5
  × 3 6
  1 8 9 0
  9 4 5 0
 (1 1 3 4 0)
```

Now, we multiply 11340 by 8.

```
  1 1 3 4 0
  ×     8
 (9 0 7 2 0)
```

Hence, $315 \times 36 \times 8 = 90720$

(b) First we multiply 5032 by 200.

```
      5 0 3 2
    ×   2 0 0
      0 0 0 0
    0 0 0 0 0
  1 0 0 6 4 0 0
 (1 0 0 6 4 0 0)
```

Now, we multiply 1006400 by 59.

```
  1 0 0 6 4 0 0
    ×       5 9
    9 0 5 7 6 0 0
  5 0 3 2 0 0 0 0
 (5 9 3 7 7 6 0 0)
```

Hence, $5032 \times 200 \times 59 = 59377600$

(c) First the multiply 183 and 56.

```
      1 8 3
    ×   5 6
    1 0 9 8
    9 1 5 0
  (1 0 2 4 8)
```

Now, we multiply 10248 by 12.

```
    1 0 2 4 8
    ×     1 2
    2 0 4 9 6
  1 0 2 4 8 0
 (1 2 2 9 7 6)
```

Hence, $183 \times 56 \times 12 = 122976$

(d)   First we multiply 419 by 302.

```
        7 1 9
      × 3 0 2
      ─────────
        8 3 8
      0 0 0 0
    1 2 5 7 0 0
   (1 2 6 5 3 8)
```

Now, we multiply 126538 by 7.

Hence, $419 \times 302 \times 7 = 885766$

```
    1 2 6 5 3 8
          × 7
   ──────────────
   (8 8 5 7 6 6)
```

Exercise - 3.3

1.   Weight of a box $= 562$ kg

Weight of 242 boxes $= (562 \times 242)$ kg

```
          5 6 2
        × 2 4 2
      ───────────
        1 1 2 4
      2 2 4 8 0
    1 1 2 4 0 0
   (1 3 6 0 0 4)
```

Hence, the weight of 242 such boxes is 136004 kg.

2.   The greatest 5-digit number $= 99999$

and other number $= 222$

The product of these numbers $= 99999 \times 222$

```
        9 9 9 9 9
            × 2 2 2
      ─────────────
        1 9 9 9 9 8
      1 9 9 9 9 8 0
    1 9 9 9 9 8 0 0
   (2 2 1 9 9 7 7 8)
```

Hence, the required product is 22199778.

3.   The least number using the digits 2, 3, 0 and 5 is 2035.

The greatest 3-digit number using the digits 2, 3, 0 and 5 is 532.

So, product of least number and greatest 3-digit number

$$= 2035 \times 532$$

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

Hence, the required product is 1082620.

4. The cost of a refrigerator $\quad = ₹8625$

   The cost of 237 refrigerator $\quad = ₹(8625 \times 237)$

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

Hence, the cost of 237 such refrigerator is ₹20444125.

5. A car travels in a minute $\quad = 1752$ metres

   A car travels in 4 hours or 240 minutes $\quad = (1452 \times 240)$ metres

   Hence, car travels 420480 metres in 4 hours.

```
        1 7 5 2
      ×   2 4 0
        0 0 0 0
      7 0 0 8 0
    3 5 0 4 0 0
   (4 2 0 4 8 0)
```

6. The number of primary schools in a state $\quad = 4358$

   The average number of students in each school $\quad = 1056$

   Total number of students in state $\quad = 4358 \times 1056$

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

Hence, 4602048 students are in a state.

7. 5 hours 40 minutes $= (5 \times 60)$ minutes $+ 40$ minutes
$\qquad\qquad\qquad\qquad = 300$ minutes $+ 40$ minutes
$\qquad\qquad\qquad\qquad = 340$ minutes

Number of words type in 1 minute $\qquad = 143$
Number of words typed in 340 minutes $\quad = 143 \times 340$

```
        3 4 0
      × 1 4 3
      1 0 2 0
    1 3 6 0 0
    3 4 0 0 0
  ( 4 8 6 2 0 )
```

Number of words typed in 1 day $= 48620$

$\therefore$ Number of words typed in july month or 31 days $= 48620 \times 31$

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

Hence, Parul can typed 1507220 words in the month of July.

8. **Fill in the boxes by correct digit :**

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

Chapter 4 Division

Exercise - 4.1

1. **Divide and find the quotient and the remainder :**

(a)
```
            2 4 2
      18 ) 4 3 6 2
          − 3 6 ↓
            7 6
          − 7 2 ↓
              4 2
            − 3 6
                6
```

(b)
```
            2 3 4
      37 ) 8 6 7 2
          − 7 4 ↓
          1 2 7 ↓
        − 1 1 1 ↓
            1 6 2
          − 1 4 8
              1 4
```

Hence, Quotient = 242
and Remainder = 6

Hence, Quotient = 234
and Remainder = 4

(c)

```
        2 8 1
73) 2 0 5 8 1
  − 1 4 6↓
      5 9 8
    − 5 8 4↓
        1 4 1
       − 7 3
          6 8
```

(d)

```
          7 5 0 9
82) 6 1 5 7 3 8
  − 5 7 4↓
      4 1 7
    − 4 1 0↓
          7 3
        − 0↓
          7 3 8
        − 7 3 8
              0
```

Hence, Quotient = 281
and Remainder = 68

Hence, Quotient = 7509
and Remainder = 0

(e)

```
            3 0 0 0
123) 3 6 9 0 5 2
   − 3 6 9↓
         0
       − 0↓
         0 5
       − 0↓
           5 2
         − 0
           5 2
```

(f)

```
            1 9 7 3
355) 7 0 0 5 9 8
   − 3 5 5↓
       3 4 5 5
     − 3 1 9 5↓
         2 6 0 9
       − 2 4 8 5↓
           1 2 4 8
         − 1 0 6 3
               8 3
```

Hence Quotient = 3000
and Remainder = 52

Hence, Quotient = 1973
and Remainder = 83

(g)

```
              4 2 8 6
247) 1 0 5 8 7 3 2
   − 9 8 8↓
       7 0 7
     − 4 9 4↓
         2 1 3 3
       − 1 9 7 6↓
           1 5 7 2
         − 1 4 8 2
               9 0
```

(h)

```
              1 1 4 9 1
731) 8 4 0 0 5 6 7
   − 7 3 1↓
       1 0 9 0
     − 9 3 1↓
         3 5 9 5
       − 2 9 2 4↓
           6 7 1 6
         − 6 5 7 9↓
             1 3 7 7
           − 7 3 1
               6 4 6
```

Hence Quotient = 4286
and Remainder = 90

Hence Quotient = 11491
and Remainder = 646

(i)
```
            92408
       645)59603741
         − 5805↓
           1553
         − 1290↓
           2537
         − 2580↓
            574
            − 0↓
            5741
          − 5160
             581
```

(j)
```
            92447
       526)48627509
         − 4734↓
           1287
         − 1052↓
           2355
         − 2104↓
           2510
         − 2104↓
            4069
          − 3682
             387
```

Hence Quotient = 92408
and Remainder = 581

Hence, Quotient = 92447
and Remainder = 387

(k)
```
           2033101
        44)89456445
         − 88↓
           14
          − 0↓
           145
         − 132↓
           136
         − 131↓
            44
          − 44↓
             4
           − 0↓
            45
          − 44
             1
```

(l)
```
           945278
        41)38756425
         − 369↓
           185
         − 164↓
           216
         − 205↓
           114
          − 82↓
           322
         − 287↓
           355
         − 328
            27
```

Hence Quotient = 2033105
and Remainder = 1

Hence, Quotient = 945278
and Remainder = 27

2. Find the dividend, when :

(a)   Divisor $= 236$,   quotient $= 8352$ and remainder $= 158$

Dividend $=$ Divisor $\times$ quotient $+$ remainder

$\qquad = 236 \times 8352 + 158$

$\qquad = 1971230$

(b)   Dividend $=$ Divisor $\times$ quotient $+$ remainder

$\qquad = 163 \times 10056 + 26$

$\qquad = 1639128 + 26$

$\qquad = 1639154$

(c)   Dividend $=$ Divisor $\times$ quotient $+$ remainder

$\qquad = 235 \times 96320 + 15$

$\qquad = 22635200 + 15$

$\qquad = 22635215$

3. The greatest 7-digit number $= 9999999$

The smallest 3-digit number $= 100$

According to the question $= 9999999 \div 100$

Now,

```
            99999
100 ) 9999999
     - 900↓ | |
        999 |
      - 900↓
         999 |
       - 900↓
          999 |
        - 900↓
           999
         - 900
            99
```

Hence, Quotient $= 99999$ and Remainder $= 99$

4. The largest 8-digit number $= 99999999$

The largest 4-digit number $= 9999$

$$\begin{array}{r} 10001 \\ 9999\overline{)99999999} \\ -\underline{9999}\downarrow \\ 9 \\ -\underline{0}\downarrow \\ 99 \\ -\underline{0}\downarrow \\ 999 \\ -\underline{0}\downarrow \\ 9999 \\ -\underline{9999} \\ 0 \end{array}$$

Hence, quotient = 10001 and remainder = 0

5.   Fill in the suitable digit in the boxes :

(a)
$$\begin{array}{r} 20648 \\ 263\overline{)5430599} \\ -\underline{526}\downarrow\downarrow\downarrow \\ 1705 \\ -\underline{1578}\downarrow \\ 1279 \\ -\underline{1052}\downarrow \\ 2279 \\ -\underline{2104} \\ 175 \end{array}$$

(b)
$$\begin{array}{r} 21983 \\ 185\overline{)4066987} \\ -\underline{370}\downarrow \\ 366 \\ -\underline{185}\downarrow \\ 1819 \\ -\underline{1668}\downarrow \\ 1548 \\ -\underline{1480}\downarrow \\ 687 \\ -\underline{555} \\ 132 \end{array}$$

Exercise - 4.2

1.   Total number of books   = 946580
Number of book in a shelves   = 265
Number of shelves required
= 946580 ÷ 265

$$\begin{array}{r} 3572 \\ 265\overline{)946580} \\ -\underline{795}\downarrow\downarrow \\ 1515 \\ -\underline{1325}\downarrow \\ 1908 \\ -\underline{1855}\downarrow \\ 530 \\ -\underline{530} \\ 0 \end{array}$$

Hence, 3572 shelves required.

2. Number of persons visited in a leap year or 366 days $= 941718$

Number of person visited in a day $= 941718 \div 366$

$$
\begin{array}{r}
2573 \\
366\overline{)941718} \\
-732\downarrow \\
\hline
2097 \\
-1830\downarrow \\
\hline
2671 \\
-2562\downarrow \\
\hline
1098 \\
-1098 \\
\hline
0
\end{array}
$$

Hence, 2572 persons visited in a day.

3. A company manufactures scooters in 463 days $= 23316217$

A company manufactured scooters in a day $= 23316217 \div 463$

$$
\begin{array}{r}
50359 \\
463\overline{)23316217} \\
-2315\downarrow \\
\hline
166 \\
-0\downarrow \\
\hline
1662 \\
-1389\downarrow \\
\hline
2731 \\
-2315\downarrow \\
\hline
4167 \\
-4167 \\
\hline
0
\end{array}
$$

Hence, 50359 scooters manufactured by the company in a day.

4. Number of apples are packed in 2534 boxes $= 826084$

Number of apples are packed in a box $= 826084 \div 2534$

$$
\begin{array}{r}
326 \\
2534\overline{)826084} \\
-7602\downarrow\downarrow \\
\hline
6588 \\
-5068\downarrow \\
\hline
15204 \\
-15204 \\
\hline
0
\end{array}
$$

Hence, 326 apples are in each box

5. Number of days in March, April, May and June

$$= (31 + 30 + 31 + 30) \text{ days}$$
$$= 122 \text{ days}$$

Total sale of milk in 122 days $= 3134668$ litres

Sale of milk in one day $= 3134668 \text{ litres} \div 122$

```
              25694
       122 ) 3134668
           - 244↓
              694
            - 610↓
              846
            - 732↓
             1146
           - 1068↓
              488
            - 488
                0
```

Hence, 25694 litres milk selll everyday.

6. 60 minutes $= 1$ hour

1 minute $= \dfrac{1}{60}$ hours

The hours are in 293520 minutes $= 293520 \text{ hours} \div 60$

```
            4 8 9 2
      6 0 ) 2 9 3 5 2 0
          - 2 4 0↓
            5 3 5
          - 4 8 0↓
            5 5 2
          - 5 4 0↓
            1 2 0
          - 1 2 0
                0
```

Hence, the 4892 hours are in 293520 minutes.

7. An egg-seller bought eggs $= 264054$

The rotten eggs $= 159$

An egg-seller bought acurate eggs $\quad = 264054 - 159$

$\qquad\qquad\qquad\qquad\qquad\qquad\quad = 263895$

Number of eggs are packed in 723 boxes $\quad = 263895$

Number of eggs are packed in one box $\quad = 263895 \div 723$

$$
\begin{array}{r}
365 \\
723\overline{)263895} \\
-2169\downarrow \\
\hline
4699 \\
-4338\downarrow \\
\hline
3615 \\
-3615 \\
\hline
0 \\
\end{array}
$$

Hence, 365 eggs are packed in each box.

8. Divisor = 532, quoitent = 247 and remainder = 96

Dividend $= $ Divisor $\times$ quoitent $+$ remainder

$\qquad\qquad = 532 \times 247 + 96$

$\qquad\qquad = 131404 + 96 = 131500$

9. First we divided 350826 from 392.

$$
\begin{array}{r}
894 \\
392\overline{)850826} \\
-3136\downarrow \\
\hline
3722 \\
-3528\downarrow \\
\hline
1946 \\
-1568 \\
\hline
378 \\
\end{array}
$$

If we subtract 378 from the given number 350826, then

$\qquad\qquad\qquad = 350826 - 378 = 350448$

350448 be exactly divisible by 392.

Hence, the required number is 378/

10. First we divided 856057 by 461.

Chapter 5 : Percentage

1. **Convert the following decimals in percents :**

    (a) $0.54 = (0.54 \times 100)\%$

    $= 54\%$

    (b) $0.6 = (0.6 \times 100)\%$

    $= 60\%$

    (c) $3.02 = (3.02 \times 100)\%$

    $= 302\%$

    (d) $9.73 = (9.73 \times 100)\%$

    $= 973\%$

    (e) $0.823 \quad = (0.823 \times 100)\%$

    $= 82.3\%$

    (f) $0.037 \quad = (0.037 \times 100)\%$

    $= 3.7\%$

    (g) $0.206 \quad = (0.206 \times 100)\%$

    $= 20.6\%$

    (h) $0.0085 \quad = (0.0085 \times 100)\%$

    $= 0.85\%$

    (i) $0.039 \quad = (0.039 \times 100)\%$

    $= 3.9\%$

2. **Convert the following percents to decimals :**

    (a) $24\% = 24 \times \dfrac{1}{100}$

    $= \dfrac{24}{100} = 0.24$

    Hence, $24\% = 0.24$

    (b) $63.8\% = 63.8 \times \dfrac{1}{100}$

    $= \dfrac{63.8 \times 10}{100 \times 10}$

    $= \dfrac{638}{1000} = 0.638$

Hence, $63.8\% = 0.638$

(c) $173\% = 173 \times \dfrac{1}{100}$

$= \dfrac{173}{100} = 1.73$

Thus, $173\% = 1.73$

(d) $70.4\% = 70.4 \times \dfrac{1}{100}$

$= \dfrac{70.4 \times 10}{100 \times 10}$

$= \dfrac{704}{1000} = 0.704$

Thus, $70.4\% = 0.704$

(e) $9.23\% = 9.23 \times \dfrac{1}{100}$

$= \dfrac{9.23 \times 100}{100 \times 100}$

$= \dfrac{923}{10000} = 0.0923$

Thus $9.23\% = 0.0923$

(f) $0.17\% = 0.17 \times \dfrac{1}{100}$

$= \dfrac{0.17}{100}$

$= \dfrac{0.17 \times 100}{100 \times 100}$

$= \dfrac{17}{10000} = 0.0017$

Thus $0.17\% = 0.0017$

(g) $8.05\% = 8.05 \times \dfrac{1}{100}$

$$= \frac{8.05 \times 100}{100 \times 100}$$

$$= \frac{805}{10000} = 0.0805$$

Thus $8.05\% = 0.0805$

(h) $0.0085\% = 0.0085 \times \frac{1}{100}$

$$= \frac{0.0085 \times 10000}{100 \times 10000}$$

$$= \frac{85}{1000000} = 0.000085$$

Thus $0.0085\% = 0.000085$

(i) $0.18\% = 0.18 \times \frac{1}{100}$

$$= \frac{0.18 \times 100}{100 \times 100}$$

$$= \frac{18}{10000} = 0.0018$$

Thus $0.18\% = 0.0018$

3. Convert the following fractions to percents :

(a) $\frac{3}{5} = \left(\frac{3}{5} \times 100 \right)\%$

$$= (3 \times 20)\%$$

$$= 60\%$$

(b) $\frac{7}{10} = \left(\frac{7}{10} \times 100 \right)\%$

$$= \left(\frac{7 \times 100}{10} \right)\%$$

$$= \left(\frac{700}{10} \right)\%$$

$$= 70\%$$

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(c) $\dfrac{11}{25} = \left(\dfrac{11}{25} \times 100 \right)\%$

$= \left(\dfrac{11 \times 100}{25} \right)\%$

$= \left(\dfrac{1100}{25} \right)\%$

$= 44\%$

(d) $\dfrac{23}{40} = \left(\dfrac{23}{40} \times 100 \right)\%$

$= \left(\dfrac{23 \times 100}{40} \right)\%$

$= \left(\dfrac{2300}{40} \right)\%$

$= 57.5\%$

(e) $2\dfrac{3}{4} = \dfrac{2 \times 4 + 3}{4} = \dfrac{11}{4}$

$= \left(\dfrac{11}{4} \times 100 \right)\%$

$= \left(\dfrac{11 \times 100}{4} \right)\%$

$= \left(\dfrac{1100}{4} \right)\%$

$= 275\%$

(f) $6\dfrac{9}{10} = \dfrac{6 \times 10 + 9}{10} = \dfrac{69}{10}$

$= \left(\dfrac{69}{10} \times 100 \right)\%$

$= \left(\dfrac{6900}{10} \right)\%$

$= 690\%$

(g) $37\dfrac{1}{2} = \dfrac{37 \times 2 + 1}{2} = \dfrac{75}{2}$

$$= \left(\dfrac{75}{2} \times 100\right)\%$$

$$= \left(\dfrac{7500}{2}\right)\%$$

$$= 3750\%$$

(h) $18\dfrac{9}{25} = \dfrac{18 \times 25 + 9}{25}$

$$= \dfrac{459}{25}$$

$$= \left(\dfrac{459}{25} \times 100\right)\%$$

$$= \left(\dfrac{45900}{25}\right)\%$$

$$= 1836\%$$

4. $24\% = \dfrac{24}{100}$

We have to find 24%, i.e.,   of ₹ 400

Now, to find   of ₹ 400, first we divide ₹400 by 100.

₹ 400 ÷ 100 = ₹ 4

And then multiply ₹ 4 by 24.

₹ 4 × 24 = ₹ 96

Hence, 24% of ₹ 400 = ₹ 96

5. $35\% = \dfrac{35}{100}$

So, we have to find $\dfrac{35}{100}$ of ₹ 6300.

First we divide ₹ 6300 by.

₹ 6300 ÷ 100 = ₹ 63

And then multiply ₹ 63 by 35.

₹ 63 × 35 = ₹ 2205

Hence, he saves ₹ 2205 per month.

6. 40% of 70m long rope $= 40\% \times 70$ m

$$= \left(40 \times \frac{1}{100}\right) \times 70\text{m}$$

$$= \left(\frac{40}{100}\right) \times 70\text{m}$$

$$= \left(\frac{40}{100} \times 70\right)\text{m}$$

$$= \left(\frac{40 \times 70}{100}\right)\text{m}$$

$$= \left(\frac{2800}{100}\right)\text{m}$$

$$= 28\text{m}$$

Hence 40% of 70m long rope is 28 m.

Chapter 6   Decimal Numbers

Exercise - 6.1

1.   Find the sum

(a)
```
   2.056
  13.800
+  9.430
 25.286
```
(b)
```
  73.460
   0.820
+ 26.047
100.327
```
(c)
```
  42.050
  20.007
+ 84.390
146.447
```

(d)
```
  68.392
   4.800
+102.068
175.260
```
(e)
```
  39.290
 127.046
+ 16.795
183.131
```
(f)
```
  24.926
   3.800
+138.549
167.275
```

2.   Arrange in columns and add :

(a)   Now, writing the given decimal numbers columnwise and adding, we get,

```
  6.28
  3.52
+ 3.27
13.07
```

Hence, $6.28 + 3.52 + 3.27 = 13.07$

(b) Converting the given decimals into like decimals, they become 0.47, 0.60 and 46.30.

Now, writing the them columnwise and adding, we get,

$$\begin{array}{r} 0.47 \\ 0.60 \\ +46.30 \\ \hline 47.37 \end{array}$$

Hence, $0.47 + 0.60 + 46.30 = 47.37$

(c) Converting the given decimal numbers into like decimals, they become 23.65, 24.00, 29.08

Now, writing them columnwise and adding, we get,

$$\begin{array}{r} 23.65 \\ 24.00 \\ +29.08 \\ \hline 76.73 \end{array}$$

Hence, $23.65 + 24 + 29.08 = 46.73$

(d) Converting the given decimal numbers into like decimals, they become 42.670, 7.263, 20.000

Now, writing them column wise and adding, we get,

$$\begin{array}{r} 42.670 \\ 7.263 \\ + 20.000 \\ \hline 69.933 \end{array}$$

Hence, $42.67 + 7.263 + 20 = 69.933$

3. **Solve :**

(a) Converting the given decimal numbers into like decimals, they become 8.30, 0.54, 20.03

Now, writing them column wise and adding, we get,

$$\begin{array}{r} 8.30 \\ 0.54 \\ + 20.03 \\ \hline 28.87 \end{array}$$

Hence, $8.3 + 0.54 + 20.03 = 28.87$

(b) Converting the given decimal numbers into like decimals, they become 70.250, 9.005, 2.700

Now, writing them column wise and adding, we get,

$$
\begin{array}{r}
70.250 \\
9.005 \\
+\ 2.700 \\
\hline
81.955 \\
\end{array}
$$

Hence, $70.25 + 9.005 + 2.7 = 81.955$

(c) Converting the given decimal numbers into like decimals, they become 27.076, 0.770, 0.004

Now, writing them column wise and adding, we get,

$$
\begin{array}{r}
27.076 \\
0.77 \\
+\ 0.004 \\
\hline
27.850 \\
\end{array}
$$

Hence, $27.076 + 0.77 + 0.004 = 27.850$

(d) Converting the given decimal numbers into like decimals, they become 150.63, 25.20, 41.00

Now, writing them column wise and adding, we get,

$$
\begin{array}{r}
150.63 \\
25.20 \\
+\ 41.00 \\
\hline
216.83 \\
\end{array}
$$

Hence, $150.63 + 25.2 + 41 = 216.83$

(e) Converting the given decimal numbers into like decimals, they become 27.000, 0.512, 18.600

Now, writing them column wise and adding, we get,

$$
\begin{array}{r}
27.000 \\
0.512 \\
+\ 46.600 \\
\hline
46.112 \\
\end{array}
$$

Hence, $27 + 0.512 + 18.6 = 46.112$

(f) Converting the given decimal numbers into like decimals, they become 0.750, 10.325, 48.000

Now, writing them column wise and adding, we get,

$$\begin{array}{r} 0.750 \\ 10.325 \\ +\ 48.000 \\ \hline 59.075 \\ \hline \end{array}$$

Hence, $0.75 + 10.325 + 48 = 59.075$

4. **Subtract :**

(a) 30.64 and 18.26 are like decimals :

Now, writing them columnwise and subtracting, we get,

$$\begin{array}{r} 30.64 \\ -\ 18.26 \\ \hline 12.38 \\ \hline \end{array}$$

Hence, $30.64 - 18.26 = 12.38$

(b) 6.051 and 9.328 are like decimals :

Now, writing them columnwise and subtracting, we get,

$$\begin{array}{r} 9.238 \\ -\ 6.051 \\ \hline 3.187 \\ \hline \end{array}$$

Hence, $9.238 - 6.051 = 3.187$

(c) 0.23 and 0.57 are like decimals :

Now, writing them columnwise and subtracting, we get,

$$\begin{array}{r} 0.57 \\ -\ 0.23 \\ \hline 0.34 \\ \hline \end{array}$$

Hence, $0.57 - 0.23 = 0.34$

(d) 0.715 and 1.402 are like decimals :

Now, writing them columnwise and subtracting, we get,

$$\begin{array}{r} 1.402 \\ -\ 0.715 \\ \hline 0.687 \\ \hline \end{array}$$

Hence, $1.402 - 0.715 = 0.687$

(e) Converting the given decimals into like decimals, they become 5.87 and 14.20

Now, writing them columnwise and subtracting, we get,

$$
\begin{array}{r}
14.20 \\
- \ 5.87 \\
\hline
8.33 \\
\end{array}
$$

Hence, $14.20 - 5.87 = 8.33$

(f) Converting the given decimals into like decimals, they become 109.54 and 250.00.

Now, writing them columnwise and subtracting, we get,

$$
\begin{array}{r}
250.00 \\
- \ 109.54 \\
\hline
140.46 \\
\end{array}
$$

Hence, $250.00 - 109.54 = 140.46$

5. Find the difference :

(a) 7.63 and 2.41 are like decimals.

Now, writing them columnwise and subtracting, we get,

$$
\begin{array}{r}
7.63 \\
- \ 2.41 \\
\hline
5.22 \\
\end{array}
$$

Hence, $7.63 - 2.41 = 5.22$

(b) 18.627 and 15.098 are like decimals.

Now, writing them columnwise and subtracting, we get,

$$
\begin{array}{r}
18.627 \\
- \ 15.098 \\
\hline
3.529 \\
\end{array}
$$

Hence, $18.627 - 15.098 = 3.529$

(c) 25.06 and 2.87 are like decimals.

Now, writing them columnwise and subtracting, we get,

$$
\begin{array}{r}
25.06 \\
- \ 2.87 \\
\hline
22.19 \\
\end{array}
$$

Hence, $25.06 - 2.87 = 22.19$

(d) 0.96 and 0.58 are like decimals.

Now, writing them columnwise and subtracting, we get,

$$\begin{array}{r} 0.96 \\ -\ 0.58 \\ \hline 0.38 \end{array}$$

Hence, 0.96 – 0.58 = 0.38

(e) Converting the given decimals 13.6 and 5.37 into like decimals, they become 13.60 and 5.37.

Now, writing them columnwise and subtracting, we get,

$$\begin{array}{r} 13.60 \\ -\ 5.37 \\ \hline 8.23 \end{array}$$

Hence, 13.6 – 5.37 = 8.23

(f) Converting the given decimals into like decimals, they become 15.000 and 6.925.

Now, writing them columnwise and subtracting, we get,

$$\begin{array}{r} 15.000 \\ -\ 6.925 \\ \hline 8.075 \end{array}$$

Hence, 15 – 6.925 = 8.075

6. First we find the sum of 49.15 and 26.73.

$$\begin{array}{r} 49.15 \\ +\ 26.73 \\ \hline 75.88 \end{array}$$

Now, we subtract 75.88 from 85.68

$$\begin{array}{r} 85.68 \\ -\ 75.88 \\ \hline 9.80 \end{array}$$

Hence, the required decimal is 9.80.

7. First we find the sum of 29.17 and 34.586.

$$\begin{array}{r} 29.170 \\ +\ 34.586 \\ \hline 63.756 \end{array}$$

Now, we subtract 63.756 from 70.

$$\begin{array}{r} 70.000 \\ -\ 63.756 \\ \hline 6.244 \end{array}$$

Hence, the required decimal is 6.244.

8. Since $62.04 > 28.205$

So, we subtract 28.205 from 62.04.

$$\begin{array}{r} 62.040 \\ -\ 28.205 \\ \hline 33.835 \end{array}$$

Now, we add 33.835 and 18.6

$$\begin{array}{r} 38.835 \\ +\ 18.600 \\ \hline 57.435 \end{array}$$

Hence, the required decimal is 57.435.

Exercise - 8.2

1. Find :

(a) First we multiply 25 by 4.

$$\begin{array}{r} 25 \\ \times\ 4 \\ \hline 100 \end{array}$$

The given decimal number has 1 decimal places.
So, the product will have 1 decimal places.
Thus, $2.5 \times 4 = 10.0 = 10$

(b) First we multiply 927 by 5.

$$\begin{array}{r} 927 \\ \times\ 5 \\ \hline 4635 \end{array}$$

The given decimal number has 2 decimal places.
So, the product will have 2 decimal places.
Thus, $9.27 \times 5 = 46.35$

(c) First we multiply 14316 by 9.

$$\begin{array}{r} 14316 \\ \times\ 9 \\ \hline 128844 \end{array}$$

The given decimal number has 3 decimal places.
So, the product will have 3 decimal places.
Thus, $14.316 \times 9 = 128.844$

(d) First we multiply 65176 by 14.

$$\begin{array}{r} 65176 \\ \times\ 14 \\ \hline 260704 \\ 651760 \\ \hline 912464 \end{array}$$

The given decimal number has 3 decimal places.
So, the product will have 3 decimal places.
Thus, $65.176 \times 14 = 912.464$

(e) First we multiply 31205 by 21.

$$\begin{array}{r} 31205 \\ \times\ 21 \\ \hline 31205 \\ 624100 \\ \hline 655305 \end{array}$$

The given decimal number has 2 decimal places.
So, the product will have 2 decimal places.
Thus, $312.05 \times 21 = 6553.05$

(f) First we multiply 6524 by 153.

$$\begin{array}{r} 6524 \\ \times\ 153 \\ \hline 19572 \\ 326200 \\ 652400 \\ \hline 998172 \end{array}$$

The given decimal number has 2 decimal places.
So, the product will have 2 decimal places.
Thus, $65.24 \times 153 = 9981.72$

(g)   First we multiply 85×25.

$$\begin{array}{r} 85 \\ \times\ 25 \\ \hline 425 \\ 1700 \\ \hline 2125 \end{array}$$

The given decimal number has 3 decimal places.
So, the product will have 3 decimal places.
Thus, $0.085 \times 25 = 2.125$

(h)   First we multiply 246 by 6.

$$\begin{array}{r} 246 \\ \times\ 6 \\ \hline 1476 \end{array}$$

The given decimal number has 3 decimal places.
So, the product will have 3 decimal places.
Thus, $0.246 \times 6 = 1.476$

(i)   First we multiply 16175 by 37.

$$\begin{array}{r} 16175 \\ \times\ 37 \\ \hline 113225 \\ 485250 \\ \hline 598475 \end{array}$$

The given decimal number has 3 decimal places.
So, the product will have 3decimal places.
Thus, $16.175 \times 37 = 598.475$

(j)   First we multiply 7309 by 125.

$$\begin{array}{r} 7309 \\ \times\ 125 \\ \hline 36545 \\ 146180 \\ 730900 \\ \hline 913625 \end{array}$$

The given decimal number has 2 decimal places.
So, the product will have 2 decimal places.
Thus, $73.09 \times 125 = 9136.25$

(k)   First we multiply 34420 by 218.

$$\begin{array}{r} 34420 \\ \times\ 218 \\ \hline 275360 \\ 344200 \\ 6884000 \\ \hline 7503560 \\ \hline \end{array}$$

The given decimal number has 3 decimal places.
So, the product will have 3 decimal places.
Thus, $34.420 \times 218 = 7503.560$

(l)   First we multiply 126007 by 84.

$$\begin{array}{r} 126007 \\ \times\ 84 \\ \hline 504028 \\ 10080560 \\ \hline 10584588 \\ \hline \end{array}$$

Hence, $126.007 \times 84 = 10584.588$

2.   **Find the following products :**
   (a) $2.4 \times 10 = 24$
   (b) $42.53 \times 10 = 425.3$
   (c) $0.316 \times 10 = 3.16$
   (d) $152.383 \times 10 = 15.2383$
   (e) $9.4 \times 100 = 940$
   (f) $31.84 \times 100 = 3184$
   (g) $0.38 \times 100 = 38.00 = 38$
   (h) $9.206 \times 100 = 920.600 = 920.6$
   (i) $15.06 \times 100 = 15060.00 = 15060$
   (j) $37.425 \times 1000 = 37425.000 = 37425$

Exercise - 8.3
1.   **Find the product :**
   (a)   First we multiply 945 by 73.

$$\begin{array}{r} 945 \\ \times\ 73 \\ \hline 2835 \\ 66150 \\ \hline 68985 \\ \hline \end{array}$$

Sum of the decimal places in decimal numbers = 2 + 1 = 3

So, we put the decimal paint in the product, so as to have 3 decimal places from the right.

Thus, $9.45 \times 7.3 = 68.985$

(b)   First we multiply 13526 by 27.

$$
\begin{array}{r}
13526 \\
\times\ 27 \\
\hline
94682 \\
270520 \\
\hline
365202
\end{array}
$$

Sum of the decimal places in decimal numbers = 3 + 1 = 4

So, we put the decimal paint in the product, so as to have 4 decimal places from the right.

Thus, $13.526 \times 2.7 = 36.5202$

(c)   First we multiply 7058 by 36.

$$
\begin{array}{r}
7058 \\
\times\ 36 \\
\hline
42348 \\
211740 \\
\hline
254088
\end{array}
$$

Sum of the decimal places in decimal numbers = 3 + 1 = 4

So, we put the decimal paint in the product, so as to have 4 decimal places from the right.

Thus, $70.58 \times 3.6 = 254.088$

(d)   First we multiply 709 by 8

$$
\begin{array}{r}
409 \\
\times\ 8 \\
\hline
3272
\end{array}
$$

Sum of the decimal places in decimal numbers = 3 + 1 = 4

So, we put the decimal paint in the product, so as to have 4 decimal places from the right.

Thus, $0.409 \times 0.8 = 0.3272$

2.   **Find the value of :**

(a)   First we multiply 23 by 35.

$$\begin{array}{r} 23 \\ \times\ 35 \\ \hline 115 \\ 690 \\ \hline \boxed{800} \end{array}$$

Sum of the decimal places in decimal numbers $= 1 + 1 = 2$

So, we put the decimal point in the product, so, as to have 2 decimal places from the right.

Thus, $2.3 \times 3.5 = 8.00 = 8$

(b) First we multiply 136 by 81.

$$\begin{array}{r} 136 \\ \times\ 81 \\ \hline 136 \\ 10880 \\ \hline \boxed{11016} \end{array}$$

Sum of the decimal places in decimal numbers $= 1 + 1 = 2$

So, we put the decimal point in the product, so, as to have 2 decimal places from the right.

Thus, $13.6 \times 8.1 = 110.16$

(c) First we multiply 75 by 3.

$$\begin{array}{r} 75 \\ \times\ 3 \\ \hline \boxed{225} \end{array}$$

Sum of the decimal places in decimal numbers $= 1 + 1 = 2$

So, we put the decimal point in the product, so, as to have 2 decimal places from the right.

Thus, $7.5 \times 0.3 = 2.25$

(d) First we multiply 163 by 7.

$$\begin{array}{r} 163 \\ \times\ 7 \\ \hline \boxed{1141} \end{array}$$

Sum of the decimal places in decimal numbers $= 1 + 1 = 2$

So, we put the decimal point in the product, so, as to have 2 decimal places from the right.

Thus, $16.3 \times 0.7 = 11.41$

(e)   First we multiply 445 by 25.

$$
\begin{array}{r}
4\,4\,5 \\
\times\ 2\,5 \\
\hline
2\,2\,2\,5 \\
8\,9\,0\,0 \\
\hline
\boxed{1\,1\,1\,2\,5}
\end{array}
$$

Sum of the decimal places in decimal numbers $= 1 + 1 = 2$

So, we put the decimal point in the product, so, as to have 2 decimal places from the right.

Thus, $44.5 \times 2.5 = 111.25$

(f)   First we multiply 2381 by 6.

$$
\begin{array}{r}
2\,3\,8\,1 \\
\times\ 6 \\
\hline
\boxed{1\,4\,2\,8\,6}
\end{array}
$$

Sum of the decimal places in decimal numbers $= 2 + 1 = 3$

So, we put the decimal point in the product, so, as to have 3 decimal places from the right.

Thus, $23.81 \times 0.6 = 14.286$

(g)   First we multiply 3207 by 2.

$$
\begin{array}{r}
3\,2\,0\,7 \\
\times\ 2 \\
\hline
\boxed{6\,4\,1\,4}
\end{array}
$$

Sum of the decimal places in decimal numbers $= 2 + 1 = 3$

So, we put the decimal point in the product, so, as to have 3 decimal places from the right.

Thus, $32.07 \times 0.2 = 6.414$

(h)   First we multiply 8 by 4.

$$
\begin{array}{r}
8 \\
\times\ 4 \\
\hline
\boxed{3\,2}
\end{array}
$$

Sum of the decimal places in decimal numbers $= 1 + 1 = 2$

So, we put the decimal point in the product, so, as to have 2 decimal places from the right.

Thus, $0.8 \times 0.4 = 0.32$

(i)   First we multiply 43 by 5.

$$\begin{array}{r} 43 \\ \times\ 5 \\ \hline 215 \end{array}$$

Sum of the decimal places in decimal numbers = 2 + 1 = 3

So, we put the decimal point in the product, so, as to have 3 decimal places from the right.

Thus, $0.43 \times 0.3 = 0.215$

(j)   First we multiply 36 by 3.

$$\begin{array}{r} 36 \\ \times\ 3 \\ \hline 108 \end{array}$$

Sum of the decimal places in decimal numbers = 3 + 1 = 4

So, we put the decimal point in the product, so, as to have 4 decimal places from the right.

Thus, $0.036 \times 0.3 = 0.0108$

(k)   First we multiply 7008 by 35.

$$\begin{array}{r} 7008 \\ \times\ 35 \\ \hline 35040 \\ 210240 \\ \hline 245280 \end{array}$$

Sum of the decimal places in decimal numbers = 3 + 1 = 4

So, we put the decimal point in the product, so, as to have 4 decimal places from the right.

Thus, $7.008 \times 3.5 = 24.5280$

(l)   First we multiply 923 by 7.

$$\begin{array}{r} 923 \\ \times\ 7 \\ \hline 6461 \end{array}$$

Sum of the decimal places in decimal numbers = 3 + 2 = 5

So, we put the decimal point in the product, so, as to have 5 decimal places from the right.

Thus, $0.007 \times 9.23 = 0.06461$

(m) First we multiply 89 by 25.

$$\begin{array}{r}89 \\ \times\,25 \\ \hline 445 \\ 1780 \\ \hline 2225 \end{array}$$

Sum of the decimal places in decimal numbers $= 3 + 1 = 4$

So, we put the decimal point in the product, so, as to have 4 decimal places from the right.

Thus, $0.089 \times 2.5 = 0.2225$

3. **Match the following columns and write the correct statements in your notebook :**

Column I	Column II
(I) 0.3×1	(c) 0.3
(II) 0.5×8	(f) $4.0 = 4$
(III) 0.12×7	(d) 0.84
(IV) 0.21×0.3	(b) 0.063
(V) 0.6×0.14	(a) 0.084
(VI) 0.75×0.5	(e) 0.375

Exercise - 8.4

1. **Divide :**

(a)
$$\begin{array}{r}4.6 \\ 4\overline{)18.4} \\ -16\downarrow \\ \hline 24 \\ -24 \\ \hline 0 \end{array}$$

Thus, $18.4 \div 4 = 4.6$

(b)
$$\begin{array}{r}4.7 \\ 5\overline{)23.5} \\ -20\downarrow \\ \hline 35 \\ -35 \\ \hline 0 \end{array}$$

Thus, $23.5 \div 5 = 4.7$

(c)
$$\begin{array}{r}6.6 \\ 7\overline{)46.2} \\ -42\downarrow \\ \hline 42 \\ -42 \\ \hline 0 \end{array}$$

Thus, $46.2 \div 7 = 6.6$

(d)
$$\begin{array}{r}0.9 \\ 9\overline{)8.1} \\ -81 \\ \hline 0 \end{array}$$

Thus $8.1 \div 9 = 0.9$

(e)

```
        5.5
  15 ) 82.5
      -75 ↓
        7 5
       -7 5
          0
```

Thus, $82.5 \div 15 = 5.5$

(f)

```
          8.035
  12 ) 96.420
      -96 ↓↓↓
          042
         -36 ↓
           60
         - 60
            0
```

Thus $96.035 \div 12 = 8.035$

(g)

```
          4.845
  18 ) 87.210
      -72 ↓ ↓↓
        152
      -144 ↓
        081
       - 72 ↓
          90
        - 90
           0
```

Thus, $87.21 \div 18 = 4.845$

(h)

```
          3.308
  14 ) 46.312
      - 42 ↓  ↓↓
         43
       - 42 ↓↓
         112
         112
           0
```

Thus $46.312 \div 14 = 3.308$

(i)

```
          0.552
  14 ) 7.728
      -7 0 ↓
         72
        -70 ↓
          28
        - 28
           0
```

Thus, $7.728 \div 14 = 0.552$

(j)

```
          8.27
  15 ) 124.05
      -120 ↓
         4 0
        -3 0 ↓
          105
        - 105
            0
```

Thus $124.05 \div 15 = 8.27$

(k)

```
        34.54
   21)725.34
      -63
        95
       -84
        113
       -105
          84
        - 84
           0
```

Thus, 725.34 ÷ 21 = 34.54

(l)

```
         0.30625
   32)9.620000
      -9 6
        0200
       -192
          80
        - 64
         160
        - 160
           0
```

Thus 9.62 ÷ 32 = 0.300625

(m)

```
        17.9575
   16)387.3200
      -16
       127
      -112
       153
      - 144
         92
       - 80
        120
       - 112
          80
        - 80
           0
```

Thus, 287.32 ÷ 16 = 17.9575

(n)

```
         0.926
   43)39.818
      -387
       111
      - 86
        258
      - 258
          0
```

Thus 39.818 ÷ 43 = 0.926

(o)

```
        2.3848
   25)59.6200
      -50
       9 6
      -7 5
        212
      - 200
         120
       - 100
          200
        - 200
           0
```

(p)

```
         0.059
   13)0.767
      -65
       117
      -117
         0
```

Thus, $59.62 \div 25 = 2.3848$ Thus $0.767 \div 13 = 0.059$

(q)
```
        1.275
   4) 5.100
     -4 ↓
      1 1
     -8 ↓
       30
     - 28 ↓
        20
      - 20
         0
```

(r)
```
         3.6
   26) 93.6
      -78 ↓
       156
      -156
         0
```

Thus, $5.1 \div 4 = 1.275$ Thus $93.6 \div 26 = 3.6$

Exercise - 8.5

1.   Find the quotient :

(a)
```
        0.832
   10) 8.320
      -8 0 ↓
        32
      - 30 ↓
         20
       - 20
          0
```

(b)
```
           1.834
   100) 183.400
       -100 ↓
        834
       -800 ↓
        340
      - 300 ↓
         400
       - 400
          0
```

Thus, $8.32 \div 10 = 0.832$ Thus, $183.4 \div 100 = 1.834$

(c)
```
            0.03952
   1000) 39.52000
        -3000 ↓
         9520
       - 9000 ↓
         5200
       - 5000 ↓
          2000
          2000
             0
```

(d)
```
           0.1305
   100) 13.0500
       -100 ↓
        305
      - 300 ↓↓
         500
       - 500
          0
```

Thus, $39.52 \div 1000 = 0.03952$ Thus, $13.05 \div 100 = 0.1305$

(e)

$$10\overline{)0.060}$$
$$\begin{array}{r} 0.006 \\ \hline -60 \\ \hline 0 \end{array}$$

(f)

$$1000\overline{)50.23000}$$
$$\begin{array}{r} 0.05023 \\ \hline -50\ 00 \\ \hline 2300 \\ -2000 \\ \hline 3000 \\ -3000 \\ \hline 0 \end{array}$$

Thus, $0.06 \div 10 = 0.006$ Thus, $50.23 \div 1000 = 0.05023$

2. **Fill in the blanks with 10, 100 or 1000, so, as to make the following statements true :**

(a) 10   (b) 100   (c) 10   (d) 100   (e) 100   (f) 10

Exercise - 8.6

1. **Divide :**

(a) We have,

$$2.8 \div 0.4 = \frac{2.8}{0.4}$$
$$= \frac{2.8 \times 10}{0.4 \times 10}$$
$$= \frac{28}{4}$$
$$= 7$$

$$4\overline{)28}$$
$$\begin{array}{r} 7 \\ \hline -28 \\ \hline 0 \end{array}$$

Hence, $2.8 \div 0.4 = 7$

(b) We have,

$$0.36 \div 0.3 = \frac{0.36}{0.3}$$
$$= \frac{0.36 \times 10}{0.3 \times 10}$$
$$= \frac{3.6}{3}$$
$$= 1.2$$

$$3\overline{)3.6}$$
$$\begin{array}{r} 1.2 \\ \hline -3 \\ \hline 06 \\ -6 \\ \hline 0 \end{array}$$

Thus, $0.36 \div 0.3 = 1.2$

(c) We have,

$$0.125 \div 0.05 = \frac{0.125}{0.05}$$

$$= \frac{0.125 \times 100}{0.05 \times 100}$$

$$= \frac{12.5}{5}$$

$$= 2.5$$

$$
\begin{array}{r}
2.5 \\
5\overline{)12.5} \\
-10\downarrow \\
\hline
25 \\
-25 \\
\hline
0
\end{array}
$$

Thus, $0.125 \div 0.05 = 2.5$

(d) We have,

$$6.39 \div 0.9 = \frac{6.39}{0.9}$$

$$= \frac{6.39 \times 10}{0.9 \times 10}$$

$$= \frac{63.9}{10} = 6.39$$

$$
\begin{array}{r}
6.39 \\
10\overline{)63.90} \\
-60\downarrow \\
\hline
39 \\
-30\downarrow \\
\hline
90 \\
-90 \\
\hline
0
\end{array}
$$

Thus, $6.39 \div 0.9 = 6.39$

(e) We have,

$$1.52 \div 0.2 = \frac{1.52}{0.2}$$

$$= \frac{1.52 \times 10}{0.2 \times 10}$$

$$= \frac{15.2}{2} = 7.51$$

$$
\begin{array}{r}
7.51 \\
2\overline{)15.2} \\
-14\downarrow \\
\hline
12 \\
-10 \\
\hline
2 \\
-2 \\
\hline
0
\end{array}
$$

Thus, $1.52 \div 0.2 = 7.51$

(f) We have,

$$0.56 \div 0.7 = \frac{0.56}{0.7}$$

$$= \frac{0.56 \times 10}{0.7 \times 10}$$

$$= \frac{5.6}{7} = 0.8$$

$$
\begin{array}{r}
0.8 \\
7\overline{)5.6} \\
-5\ 6 \\
\hline
0
\end{array}
$$

Thus, $0.125 \div 0.05 = 2.5$

(g) We have,

$$0.093 \div 0.31 = \frac{0.093}{0.31}$$

$$= \frac{0.093 \times 100}{0.31 \times 100}$$

$$= \frac{9.3}{31} = 0.3$$

Thus, $0.093 \div 0.31 = 0.3$

```
     0.3
31)9.3
  − 9 3
      0
```

(h) We have,

$$0.416 \div 0.16 = \frac{0.416}{0.16}$$

$$= \frac{0.416 \times 100}{0.16 \times 100}$$

$$= \frac{41.6}{16} = 2.5375$$

Thus, $0.416 \div 0.16 = 2.5375$

```
        2.5375
16)41.6000
  −32
    8 6
   −8 0
      60
     − 48
      120
     − 112
        80
       − 80
          0
```

(i) We have,

$$0.39861 \div 0.43 = \frac{0.39861}{0.43}$$

$$= \frac{0.39861 \times 100}{0.43 \times 100}$$

$$= \frac{39.861}{43} = 0.927$$

Thus, $0.39861 \div 0.43 = 0.927$

```
        0.927
43)39.861
  − 387
     116
    − 86
      301
    − 301
        0
```

(j) We have,

$$15.2306 \div 50.6 = \frac{15.2306}{50.6}$$

$$= \frac{15.2306 \times 10}{50.6 \times 10}$$

$$= \frac{152.306}{506} = 0.301$$

Thus, $15.2306 \div 50.6 = 0.301$

```
          0.301
506)152.306
   −151 8
        506
      − 506
          0
```

(k) We have,

$$2.0418 \div 0.083 = \frac{2.0418}{0.083}$$

$$= \frac{2.0418 \times 1000}{0.083 \times 1000}$$

$$= \frac{2041.8}{83} = 24.6$$

```
        24.6
83 ) 2041.8
   −166 ↓
     381
   − 332 ↓
       498
     − 498
         0
```

Thus, $0.0418 \div 0.083 = 24.6$

(l) We have,

$$0.0625 \div 12.5 = \frac{0.0625}{12.5}$$

$$= \frac{0.0625 \times 10}{12.5 \times 10}$$

$$= \frac{0.625}{125} = 0.005$$

```
         0.005
125 ) 0.625
    − 0 ↓
      0 6
    − 0 ↓
        62
      − 0 ↓
        625
      − 625
          0
```

Thus, $0.0625 \div 12.5 = 0.005$

(m) We have,

$$0.36 \div 1.2 = \frac{0.36}{1.2}$$

$$= \frac{0.36 \times 10}{1.2 \times 10}$$

$$= \frac{3.6}{12} = 0.3$$

```
       0.3
12 ) 3.6
   − 3 6
       0
```

Thus, $0.36 \div 1.2 = 0.3$

(n) We have,

$$0.0096 \div 0.4 = \frac{0.0096}{0.4}$$

$$= \frac{0.0096 \times 10}{0.4 \times 10}$$

$$= \frac{0.096}{4} = 0.024$$

```
       0.024
4 ) 0.096
   −8 ↓
    16
  − 16
     0
```

Thus, $0.0096 \div 0.4 = 0.024$

(o)　We have,

$$0.0729 \div 8.1 = \frac{0.0729}{8.1}$$

$$= \frac{0.0729 \times 10}{8.1 \times 10}$$

$$= \frac{0.729}{81} = 0.009$$

Thus, $0.0729 \div 81 = 0.009$

$$
\begin{array}{r}
0.009 \\
81\overline{)0.729} \\
-\ 0\ \downarrow\ \ \ \\
0\ 7\ \ \ \\
-\ 0\ \ \ \\
072 \\
-\ 0\ \downarrow \\
729 \\
-\ 729 \\
\hline
0
\end{array}
$$

(p)　We have,

$$0.0676 \div 2.6 = \frac{0.0676}{2.6}$$

$$= \frac{0.0676 \times 10}{2.6 \times 10}$$

$$= \frac{0.676}{26} = 0.026$$

Thus, $0.0676 \div 2.6 = 0.026$

$$
\begin{array}{r}
0.026 \\
26\overline{)0.676} \\
-\ 0\ \downarrow\ \ \\
0\ 6\ \ \\
-\ 0\ \ \\
067 \\
-\ 52\ \downarrow \\
156 \\
-\ 156 \\
\hline
0
\end{array}
$$

(q)　We have,

$$7.38 \div 3.6 = \frac{7.38}{3.6}$$

$$= \frac{7.38 \times 10}{3.6 \times 10}$$

$$= \frac{73.8}{36} = 2.05$$

Thus, $7.38 \div 3.6 = 2.05$

$$
\begin{array}{r}
2.05 \\
36\overline{)73.80} \\
-\ 72\ \downarrow \\
1\ 8\ \\
-\ 0\ \downarrow \\
180 \\
-\ 180 \\
\hline
0
\end{array}
$$

(r)　We have,

$$12.3615 \div 2.05 = \frac{12.3615}{2.05}$$

$$= \frac{12.3615 \times 100}{2.05 \times 100}$$

$$= \frac{1236.15}{205} = 6.03$$

Thus, $12.3615 \div 2.05 = 6.03$

$$
\begin{array}{r}
6.03 \\
205\overline{)1236.15} \\
-\ 1230\ \downarrow \\
6\ 1\ \\
-\ 0\ \downarrow \\
615 \\
-\ 615 \\
\hline
0
\end{array}
$$

Exercise - 8.7

1. **Find the quotient in each of the following :**

(a) We have,

$$12 \div 1.5 = \frac{12}{1.5}$$

$$= \frac{12 \times 10}{1.5 \times 10}$$

$$= \frac{120}{15} = 8$$

$$\begin{array}{r} 8 \\ 15\overline{)120} \\ -120 \\ \hline 0 \end{array}$$

Thus, $12 \div 1.5 = 8$

(b) We have,

$$72 \div 2.4 = \frac{72}{2.4}$$

$$= \frac{72 \times 10}{2.4 \times 10}$$

$$= \frac{720}{24} = 30$$

$$\begin{array}{r} 30 \\ 24\overline{)720} \\ -72\downarrow \\ \hline 0 \\ -0 \\ \hline 0 \end{array}$$

Thus, $72 \div 2.4 = 30$

(c) We have,

$$152 \div 1.9 = \frac{152}{1.9}$$

$$= \frac{152 \times 10}{1.9 \times 10}$$

$$= \frac{1520}{19} = 80$$

$$\begin{array}{r} 80 \\ 19\overline{)1520} \\ -152\downarrow \\ \hline 0 \\ -0 \\ \hline 0 \end{array}$$

Thus, $152 \div 1.9 = 80$

(d) We have,

$$25 \div 0.05 = \frac{25}{0.05}$$

$$= \frac{25 \times 100}{0.05 \times 100}$$

$$= \frac{2500}{5} = 500$$

$$\begin{array}{r} 500 \\ 5\overline{)2500} \\ -25\downarrow \\ \hline 0 \\ -0\downarrow \\ \hline 0 \\ -0 \\ \hline 0 \end{array}$$

Thus, $25 \div 0.05 = 500$

(e) We have,

$$21 \div 0.84 = \frac{21}{0.84}$$

$$= \frac{21 \times 100}{0.84 \times 100}$$

$$= \frac{2100}{84} = 25$$

Thus, $21 \div 0.84 = 25$

```
        25
84)2100
  -168↓
    420
  - 420
      0
```

(f) We have,

$$120 \div 0.016 = \frac{120}{0.016}$$

$$= \frac{120 \times 1000}{0.016 \times 1000}$$

$$= \frac{120000}{16} = 7500$$

Thus, $120 \div 0.016 = 7500$

```
         7500
16)120000
  - 112↓
      80
    - 80↓
       0
     - 0↓
       0
     - 0
       0
```

(g) We have,

$$203 \div 0.07 = \frac{203}{0.07}$$

$$= \frac{203 \times 100}{0.07 \times 100}$$

$$= \frac{20300}{7} = 2900$$

Thus, $203 \div 0.07 = 2900$

```
        2900
7)20300
 - 14↓
    63
  - 63↓
     0
   - 0↓
     0
   - 0
     0
```

(h) We have,

$$640 \div 0.32 = \frac{640}{0.32}$$

$$= \frac{640 \times 100}{0.32 \times 100}$$

$$= \frac{64000}{32} = 2000$$

Thus, $640 \div 0.32 = 2000$

```
         2000
32)64000
  - 64↓
     0
   - 0↓
     0
   - 0↓
     0
   - 0
     0
```

(i) We have,

$$675 \div 2.25 = \frac{675}{2.25}$$

$$= \frac{675 \times 100}{2.25 \times 100}$$

$$= \frac{67500}{225} = 300$$

Thus, $675 \div 2.25 = 300$

$$\begin{array}{r} 300 \\ 225\overline{)67500} \\ -675\downarrow \\ \hline 0 \\ -0\downarrow \\ \hline 0 \\ -0 \\ \hline 0 \end{array}$$

Exercise - 8.8

1. Divide :

(a) We have,

$$42 \div 8 \quad = \frac{42}{8}$$

$$= 5.25$$

Thus, $42 \div 8 = 5.25$

$$\begin{array}{r} 5.25 \\ 8\overline{)4200} \\ -40\downarrow \\ \hline 20 \\ -16\downarrow \\ \hline 40 \\ -40 \\ \hline 0 \end{array}$$

(b) We have,

$$25 \div 13 \quad = \frac{25}{13}$$

$$\begin{array}{r} 1.923076 \\ 13\overline{)2500000} \\ -13\downarrow \\ \hline 120 \\ -117\downarrow \\ \hline 30 \\ -26\downarrow \\ \hline 40 \\ -39\downarrow \\ \hline 100 \\ -91\downarrow \\ \hline 90 \\ -78 \\ \hline 12 \end{array}$$

Thus, $25 \div 13 = 1.923076$

(c) We have,

$$800 \div 32 \quad = \frac{800}{32}$$

Thus, $800 \div 32 = 25$

$$\begin{array}{r} 25 \\ 32\overline{)800} \\ -64\downarrow \\ \hline 160 \\ -160 \\ \hline 0 \end{array}$$

(d) We have,

$$520 \div 65 = \frac{520}{65}$$

$$\begin{array}{r} 8 \\ 65\overline{)520} \\ -520 \\ \hline 0 \end{array}$$

Thus, $520 \div 65 = 8$

2. **Find the quotient in each of the following :**

(a) We have,

$$53 \div 20 =$$

$$\begin{array}{r} 2.65 \\ 20\overline{)5300} \\ -40\downarrow \\ \hline 130 \\ -120\downarrow \\ \hline 100 \\ -100 \\ \hline 0 \end{array}$$

Thus, $53 \div 20 = 2.65$

(b) We have,

$$111.84 \div 48 =$$

$$\begin{array}{r} 2.33 \\ 48\overline{)111.84} \\ -96\downarrow \\ \hline 158 \\ -144\downarrow \\ \hline 144 \\ -144 \\ \hline 0 \end{array}$$

Thus, $111.84 \div 48 = 2.33$

(c) We have,

$$7 \div 25 =$$

$$\begin{array}{r} 0.28 \\ 25\overline{)700} \\ -50\downarrow \\ \hline 200 \\ -200 \\ \hline 0 \end{array}$$

Thus, $7 \div 25 = 0.28$

(d) We have,

$$24 \div 40 =$$

$$\begin{array}{r} 0.6 \\ 40\overline{)240} \\ -240 \\ \hline 0 \end{array}$$

Thus, $24 \div 40 = 0.6$

Chapter 7 : Fractions

Exercise - 7.1

1. **Shade the following given fractions in the figures.**

(a) (b) (c) (d)

(e) (f) (g) (h)
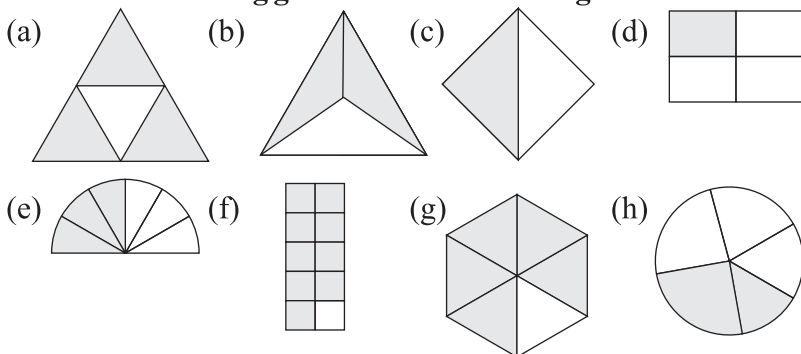
2. **Write the fractions of each of the following shaded regions.**

(a) $\dfrac{3}{8}$ (b) $\dfrac{4}{9}$ (c) $\dfrac{1}{3}$ (d) $\dfrac{4}{8}$

(e) $\dfrac{4}{5}$ (f) $\dfrac{1}{4}$ (g) $\dfrac{3}{8}$ (h) $\dfrac{3}{4}$
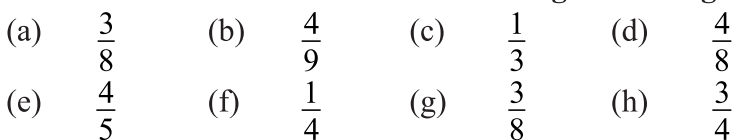
3. **Write the fractions for each of the following :**

(a) $\dfrac{3}{5}$ (b) $\dfrac{5}{6}$ (c) $\dfrac{5}{8}$ (d) $\dfrac{3}{4}$

(e) $\dfrac{2}{7}$ (f) $\dfrac{4}{7}$ (g) $\dfrac{7}{11}$ (h) $\dfrac{7}{9}$

(i) $\dfrac{6}{7}$ (j) $\dfrac{2}{4}$ (k) $\dfrac{3}{6}$ (l) $\dfrac{7}{8}$
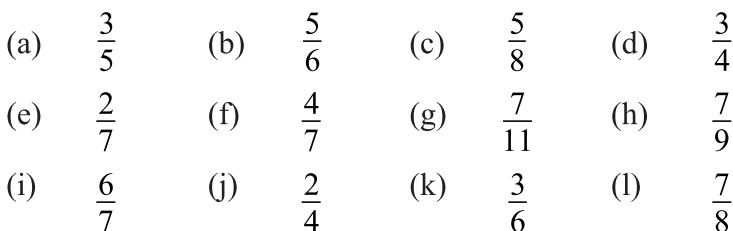
4. **Write the number name for each of the following :**

(a) Two-sevenths   (b) Four-fifths

(c) Five-sixths   (d) Three-elevenths

(e) Five-nineths   (f) Six-tenths

(g) Four-nineths   (h) Seven-twelfths

(i) Three-eights   (j) Five-twelfths
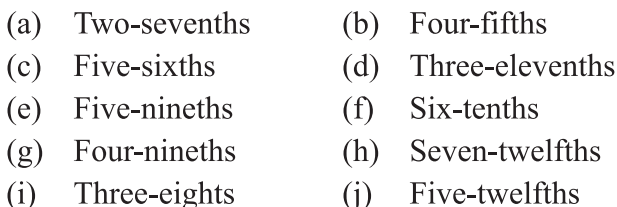
5. **Write a fraction for each of the following division numeral :**

(a) $\dfrac{4}{15}$ (b) $\dfrac{2}{9}$ (c) $\dfrac{5}{11}$ (d) $\dfrac{4}{8}$ (e) $\dfrac{5}{8}$

(f) $\dfrac{7}{12}$　　(g) $\dfrac{6}{13}$　　(h) $\dfrac{7}{11}$　　(i) $\dfrac{9}{11}$

6. **Write a division numeral for each of the following fractions.**

(a) $2 \div 7$　　(b) $5 \div 6$　　(c) $9 \div 11$　　(d) $5 \div 8$

(e) $15 \div 19$　(f) $12 \div 23$　(g) $7 \div 9$　　(h) $5 \div 12$

(i) $7 \div 15$

Exercise 7.2

1. **Write numerators and denominators of the following**

(a) Numerator = 6, Denominator = 11

(b) Numerator = 5, Denominator = 19
(c) Numerator = 3, Denominator = 13
(d) Numerator = 7, Denominator = 12
(e) Numerator = 7, Denominator = 19
(f) Numerator = 9, Denominator = 13
(g) Numerator = 8, Denominator = 15
(h) Numerator = 2, Denominator = 9
(i) Numerator = 4, Denominator = 5
(j) Numerator = 4, Denominator = 19

2. **Write the fractions whose numerators and denominators are given :**

(a) $\dfrac{7}{11}$　　(b) $\dfrac{8}{3}$　　(c) $\dfrac{3}{5}$　　(d) $\dfrac{9}{11}$

(e) $\dfrac{7}{9}$　　(f) $\dfrac{13}{17}$　　(g) $\dfrac{15}{21}$　　(h) $\dfrac{8}{9}$

3. **Write the value of each of following :**

(a) $\dfrac{1}{7} \times 56 = \dfrac{1 \times 56}{7} = 56 \div 7 = 8$

(b) $\dfrac{1}{3} \times 36 = \dfrac{1 \times 36}{3} = 36 \div 3 = 12$

(c) $\dfrac{1}{15} \times 75 = \dfrac{1 \times 75}{15} = 75 \div 15 = 5$

(d) $\dfrac{3}{8} \times 64 = \dfrac{3 \times 64}{8} = 192 \div 8 = 24$

(e) $\dfrac{2}{3} \times 27 = \dfrac{2 \times 27}{3} = 54 \div 3 = 18$

(f) $\dfrac{1}{9} \times 63 = \dfrac{1 \times 63}{9} = 63 \div 9 = 7$

(g) $\dfrac{3}{5} \times 35 = \dfrac{3 \times 35}{5} = 105 \div 5 = 21$

(h) $\dfrac{4}{3} \times 18 = \dfrac{4 \times 18}{3} = 72 \div 3 = 24$

(i) $\dfrac{5}{7} \times 49 = \dfrac{5 \times 49}{7} = 245 \div 7 = 35$

4.   Calculate the following fractions :

(a) $\dfrac{5}{7} \times 21 = \dfrac{5 \times 21}{7} = 105 \div 7 = 15$

(b) $\dfrac{6}{7} \times 63 = \dfrac{6 \times 63}{7} = 378 \div 7 = 54$

(c) $\dfrac{4}{9} \times 72 = \dfrac{4 \times 72}{9} = 288 \div 9 = 32$

(d) $\dfrac{3}{7} \times 63 = \dfrac{3 \times 63}{7} = 189 \div 7 = 27$

(e) $\dfrac{2}{3} \times 27 = \dfrac{2 \times 27}{3} = 54 \div 3 = 18$

(f) $\dfrac{3}{4} \times 20 = \dfrac{3 \times 20}{4} = 60 \div 4 = 15$

(g) $\dfrac{1}{5} \times 35 = \dfrac{1 \times 35}{5} = 35 \div 5 = 7$

(h) $\dfrac{5}{8} \times 64 = \dfrac{5 \times 64}{8} = 320 \div 8 = 40$

5. $\dfrac{1}{5}$ of $35 = \dfrac{1}{5} \times 35 = \dfrac{1 \times 35}{5} = 35 \div 5 = 7$

6. $\dfrac{1}{3}$ of $24 = \dfrac{1}{3} \times 24 = \dfrac{1 \times 24}{3} = 24 \div 3 = 8$

7. $\dfrac{1}{2}$ of $16 = \dfrac{1}{2} \times 16 = \dfrac{1 \times 16}{2} = 16 \div 2 = 8$

8. $\dfrac{1}{6}$ of $42 = \dfrac{1}{6} \times 42 = \dfrac{1 \times 42}{6} = 42 \div 6 = 7$

9. $\dfrac{1}{4}$ of $28 = \dfrac{1}{4} \times 28 = \dfrac{1 \times 28}{4} = 28 \div 4 = 7$

10. $\dfrac{1}{2}$ of $24 = \dfrac{1}{2} \times 24 = \dfrac{1 \times 24}{2} = 24 \div 2 = 12$

Exercise 7.3

1.   **Fill in the blanks :**

(a)   20   (b)   1   (c)   52   (d)   153

(e)   72   (f)   10   (g)   6   (h)   12

(i)   1   (j)   4   (k)   6   (l)   1

2.   **Fill in the blanks :**

(a)   3   (b)   2   (c)   7   (d)   9

(e)   8   (f)   3   (g)   8   (h)   1

(i)   3   (j)   3   (k)   2

3.   **Write the next three fractions of the following :**

(a) $\dfrac{8}{24} = \dfrac{16}{48} = \dfrac{32}{96}$ (b) $\dfrac{16}{40} = \dfrac{32}{80} = \dfrac{64}{160}$

(c) $\dfrac{24}{8} = \dfrac{48}{16} = \dfrac{96}{32}$ (d) $\dfrac{32}{56} = \dfrac{64}{112} = \dfrac{128}{224}$

Exercise - 7.4

1.   **Find the fractions having the same denominator :**

(a) $\dfrac{3}{6}, \dfrac{1}{6}$ (b) $\dfrac{2}{7}, \dfrac{1}{7}, \dfrac{3}{7}$ (c) $\dfrac{1}{4}, \dfrac{2}{4}$

(d) $\dfrac{2}{6}, \dfrac{1}{6}$ (e) $\dfrac{1}{4}, \dfrac{3}{4}, \dfrac{5}{4}$ (f) $\dfrac{2}{4}, \dfrac{3}{4}$

2.   **Find the fractions having the same numerator :**

(a) $\dfrac{4}{7}, \dfrac{4}{5}$ (b) $\dfrac{2}{7}, \dfrac{2}{9}$ (c) $\dfrac{3}{5}, \dfrac{3}{7}$

(d) $\dfrac{2}{3}, \dfrac{2}{5}$ (e) $\dfrac{1}{2}, \dfrac{1}{6}, \dfrac{1}{4}$ (f) $\dfrac{5}{7}, \dfrac{5}{9}$

3.   **Find the greatest fractions :**

(a) $\dfrac{2}{3}$ (b) $\dfrac{4}{5}$ (c) $\dfrac{5}{6}$ (d) $\dfrac{9}{11}$

(e) $\dfrac{1}{2}$ (f) $\dfrac{7}{8}$

4. **Find the smallest fractions :**

(a) $\dfrac{1}{7}$ (b) $\dfrac{4}{11}$ (c) $\dfrac{2}{6}$ (d) $\dfrac{1}{9}$

(e) $\dfrac{5}{11}$ (f) $\dfrac{1}{5}$

5. **Fill in the circles with < or > :**

(a) <   (b) <   (c) >   (d) >

(e) <   (f) >

6. **Arrange the following in ascending order :**

(a) $\dfrac{1}{8}, \dfrac{2}{8}, \dfrac{5}{8}, \dfrac{7}{8}$ (b) $\dfrac{1}{9}, \dfrac{1}{7}, \dfrac{1}{3}, \dfrac{1}{2}$ (c) $\dfrac{3}{13}, \dfrac{3}{7}, \dfrac{3}{5}, \dfrac{3}{4}$

(d) $\dfrac{2}{7}, \dfrac{3}{7}, \dfrac{4}{7}, \dfrac{5}{7}$ (e) $\dfrac{1}{7}, \dfrac{2}{7}, \dfrac{3}{7}, \dfrac{5}{7}$ (f) $\dfrac{3}{11}, \dfrac{5}{11}, \dfrac{7}{11}, \dfrac{10}{11}$

7. **Arrange the following in descending order :**

(a) $\dfrac{6}{7}, \dfrac{5}{7}, \dfrac{3}{7}, \dfrac{1}{7}$ (b) $\dfrac{5}{6}, \dfrac{5}{7}, \dfrac{5}{8}, \dfrac{5}{11}$ (c) $\dfrac{7}{9}, \dfrac{7}{11}, \dfrac{7}{13}, \dfrac{7}{15}$

(d) $\dfrac{1}{5}, \dfrac{1}{6}, \dfrac{1}{7}, \dfrac{1}{9}$ (e) $\dfrac{5}{7}, \dfrac{4}{7}, \dfrac{3}{7}, \dfrac{1}{7}$ (f) $\dfrac{3}{4}, \dfrac{3}{5}, \dfrac{3}{7}, \dfrac{3}{11}$

Exercise 7.5

1. **Find the sum of the following :**

(a) $\dfrac{5}{13} + \dfrac{6}{13} = \dfrac{5+6}{13} = \dfrac{11}{13}$ (b) $\dfrac{2}{9} + \dfrac{5}{9} = \dfrac{2+5}{9} = \dfrac{7}{9}$

(c) $\dfrac{8}{19} + \dfrac{7}{19} = \dfrac{8+7}{19} = \dfrac{15}{19}$ (d) $\dfrac{6}{17} + \dfrac{7}{17} = \dfrac{6+7}{17} = \dfrac{13}{17}$

(e) $\dfrac{5}{8} + \dfrac{2}{8} = \dfrac{5+2}{8} = \dfrac{7}{8}$ (f) $\dfrac{2}{7} + \dfrac{4}{7} = \dfrac{2+4}{7} = \dfrac{6}{7}$

(g) $\dfrac{5}{11} + \dfrac{4}{11} = \dfrac{5+4}{11} = \dfrac{9}{11}$ (h) $\dfrac{4}{15} + \dfrac{7}{15} = \dfrac{4+7}{15} = \dfrac{11}{15}$

(i) $\dfrac{8}{13} + \dfrac{3}{13} + \dfrac{1}{13} = \dfrac{8+3+1}{13} = \dfrac{12}{13}$

(j) $\dfrac{2}{9} + \dfrac{4}{9} + \dfrac{1}{9} = \dfrac{2+4+1}{9} = \dfrac{7}{9}$

(k) $\dfrac{2}{7} + \dfrac{3}{7} + \dfrac{1}{7} = \dfrac{2+3+1}{7} = \dfrac{6}{7}$

2. **Write the correct number in each box :**

(a) $\dfrac{1+3}{8} = \dfrac{4}{8}$

(b) $\dfrac{3+1}{5} = \dfrac{4}{5}$

(c) $\dfrac{1+7}{9} = \dfrac{8}{9}$

(d) $\dfrac{1+5+6}{13} = \dfrac{12}{13}$

3. **Find the different between :**

(a) $\dfrac{9}{13}$ and $\dfrac{5}{13} = \dfrac{9}{13} - \dfrac{5}{13} = \dfrac{9-5}{13} = \dfrac{4}{13}$

(b) $\dfrac{7}{15}$ and $\dfrac{3}{15} = \dfrac{7}{15} - \dfrac{3}{15} = \dfrac{7-3}{15} = \dfrac{4}{15}$

(c) $\dfrac{9}{10}$ and $\dfrac{2}{10} = \dfrac{9}{10} - \dfrac{2}{10} = \dfrac{9-2}{10} = \dfrac{7}{10}$

(d) $\dfrac{11}{15}$ and $\dfrac{7}{15} = \dfrac{11}{15} - \dfrac{7}{15} = \dfrac{11-7}{15} = \dfrac{4}{15}$

(e) $\dfrac{12}{13}$ and $\dfrac{5}{13} = \dfrac{12}{13} - \dfrac{5}{13} = \dfrac{12-5}{13} = \dfrac{7}{13}$

(f) $\dfrac{15}{19}$ and $\dfrac{13}{19} = \dfrac{15}{19} - \dfrac{13}{19} = \dfrac{15-13}{19} = \dfrac{2}{19}$

(g) $\dfrac{4}{5}$ and $\dfrac{3}{5} = \dfrac{4}{5} - \dfrac{3}{5} = \dfrac{4-3}{5} = \dfrac{1}{5}$

(h) $\dfrac{7}{9}$ and $\dfrac{2}{9} = \dfrac{7}{9} - \dfrac{2}{9} = \dfrac{7-2}{9} = \dfrac{5}{9}$

(i) $\dfrac{7}{11}$ and $\dfrac{5}{11} = \dfrac{7}{11} - \dfrac{5}{11} = \dfrac{7-5}{11} = \dfrac{2}{11}$

4. **Find the difference of the following :**

(a) $\dfrac{15}{17} - \dfrac{13}{17} = \dfrac{15-13}{17} = \dfrac{2}{17}$

(b) $\dfrac{9}{11} - \dfrac{4}{11} = \dfrac{9-4}{11} = \dfrac{5}{11}$

(c) $\dfrac{7}{9} - \dfrac{5}{9} = \dfrac{7-5}{9} = \dfrac{2}{9}$

(d) $\dfrac{15}{19} - \dfrac{9}{19} = \dfrac{15-9}{19} = \dfrac{6}{19}$

(e) $\dfrac{11}{15} - \dfrac{7}{15} = \dfrac{11-7}{15} = \dfrac{4}{15}$

(f) $\dfrac{13}{14} - \dfrac{9}{14} = \dfrac{13-9}{14} = \dfrac{4}{14}$

(g) $\dfrac{11}{13} - \dfrac{7}{13} = \dfrac{11-7}{13} = \dfrac{4}{13}$

(h) $\dfrac{7}{12} - \dfrac{5}{12} = \dfrac{7-5}{12} = \dfrac{2}{12}$

5. **Write the correct number of each box.**

   (a) $\dfrac{7-3}{10} = \dfrac{4}{10}$ (b) $\dfrac{7-1}{8} = \dfrac{6}{8}$ (c) $\dfrac{11-2}{15} = \dfrac{9}{15}$

6. Rohan ate $\dfrac{1}{2}$ of a pizza.

   then ate another $\dfrac{1}{2}$

   We eaten altogether $= \dfrac{1}{2} + \dfrac{1}{2}$

   $$= \dfrac{1+1}{2} = \dfrac{\cancel{2}}{\cancel{2}} = 1$$

   $= \quad$ 1 Pizza

7. Varun gave away $\dfrac{3}{8}$ of chocolate.

   Therefore chocolate left with varun.

   $$1 - \dfrac{3}{8} = \dfrac{(1 \times 8) - 3}{8}$$

   $$= \dfrac{8-3}{8} = \dfrac{5}{8}$$

8. $\quad \dfrac{5}{6} + \dfrac{9}{6} = \dfrac{\cancel{14}^{7}}{\cancel{6}_{3}} = \dfrac{7}{3}$

Chapter 8 : Multiples and Factors

Exercise - 8.1

1. **Write first four multiples of the following numerals :**

   (a) The first four multiples of 6, we multiply by the first four counting numbers.

   $6 \times 1 = 6$

   $6 \times 2 = 12$

   $6 \times 3 = 18$

   $6 \times 4 = 24$

   Hence, the first four multiples of 6 are 6, 12, 18 and 24.

(b) The first four multiples of 19, we multiply by the first four counting numbers.

$19 \times 1 = 19, \qquad 19 \times 2 = 38, \qquad 19 \times 3 = 57$

and $19 \times 4 = 76$

Hence, the first four multiples of 19 are 19, 38, 57 and 276.

(c) The first four multiples of 24, we multiply by the first four counting numbers.

$24 \times 1 = 24, \qquad 24 \times 2 = 48, \qquad 24 \times 3 = 72, \qquad 24 \times 4 = 96$

Hence, the first four multiples of 24 are 24, 48, 72 and 96.

(d) The first four multiples of 32, we multiply by the first four counting numbers.

$32 \times 1 = 32, \qquad 32 \times 2 = 64, \qquad 32 \times 3 = 96, \quad 32 \times 4 = 128$

Thus, the first four multiples of 32 are 32, 64, 96 and 128.

(e) The first four multiples of 41, we multiply by the first four counting umbers.

$41 \times 1 = 41, \qquad 41 \times 2 = 82, \qquad 41 \times 3 = 123, \; 41 \times 4 = 164$

Thus, the first four multiples of 41 are 41, 82, 123 and 164.

2. **Write all the factors of the following numerals :**

(a) The multiplication factors of 48 are :

$48 = 1 \times 48 = 2 \times 24 = 3 \times 16 = 4 \times 12 = 6 \times 8$

Therefore, the factors of 48 are 1, 2, 3, 4, 6, 8, 12, 16, 24 and 48.

(b) The multiplication factors of 104 are :

$104 = 1 \times 104 = 2 \times 52 = 4 \times 26 = 8 \times 13$

Thus, the factors of 104 are 1, 2, 4, 8, 13, 26, 52 and 104.

(c) The multiplication factors of 160 are :

$160 = 1 \times 160 = 2 \times 80 = 4 \times 40 = 5 \times 32 = 8 \times 20 = 10 \times 16$

Thus, the factors of 160 are 1, 2, 4, 5, 8, 10, 16, 20, 32, 40, 80 and 160.

(d) The multiplication factors of 216 are :

$216 = 1 \times 216 = 2 \times 108 = 3 \times 72 = 4 \times 54 = 6 \times 36 = 8 \times 27 = 9 \times 24 = 12 \times 18$

Thus, the factors of 216 are 1, 2, 3, 4, 6, 8, 9, 12, 18, 24, 27, 36, 54, 72, 108 and 216.

(e) The multiplication factors of 385 are :

$385 = 1 \times 385 = 5 \times 77 = 7 \times 55 = 11 \times 35$

Thus, the factors of 285 are 1, 5, 7, 11, 35, 55, 77 and 85.

3. The odd numbers between 351 and 369 are :

$351 + 2 = 353, \quad 353 + 2 = 355, \quad 355 + 2 = 357, \quad 357 + 2 = 359,$
$359 + 2 = 361, \quad 361 + 2 = 363, \quad 363 + 2 = 365, \quad 365 + 2 = 367$

Thus, the odd umbers are 353, 355, 357 359, 361, 363, 364, 365 and 367/

4. The even numbers between 215 and 231 are :

$215 + 1 = 216, \quad 216 + 2 = 218, \quad 218 + 2 = 220, \quad 220 + 2 = 222,$
$222 + 2 = 224, \quad 224 + 2 = 226, \quad 226 + 2 = 228, \quad 228 + 2 = 230$

Thus, the even numbers are 216, 218, 220, 222, 224, 226, 228 and 230.

5. **Write the prime factorization of the following numerals :**

(a) Let us factorize the number y the division method.

2	42
3	21
7	7
	1

Hence, the prime factorization of $42 = 2 \times 3 \times 7$

(b) Let us factorize the number y the division method.

2	54
3	27
3	9
3	3
	1

Hence, the prime factorization of $54 = 2 \times 3 \times 3 \times 3$

(c) Let us factorize the number by the division method.

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

Hence, the prime factorization of $96 = 2 \times 2 \times 2 \times 2 \times 2 \times 3$.

(d) Let us factorize the number by the division method.

2	258
3	129
43	43
	1

Hence, the prime factorization of 258 is $2 \times 3 \times 43$.

(e) Let us factorize the number by the division method.

3	693
3	231
7	77
11	11
	1

Hence, the prime factorization of 693 is $3 \times 3 \times 7 \times 77$

6. In each of the following cases, state whether the first number is a factor of the second number :

(a) To check whether 8 is a factor of 256, we divide 256 by 8.

$$
\begin{array}{r}
32 \\
8\overline{)256} \\
-24\downarrow \\
\hline
16 \\
-16 \\
\hline
0
\end{array}
$$

Since remainder is 0, so 8 is a factor of 256.

(b) To check whether 13 is a factor of 826, we divide 826 by 13.

$$\begin{array}{r} 63 \\ 13\overline{)826} \\ -75\downarrow \\ \hline 46 \\ -39 \\ \hline 7 \end{array}$$

Since, remainder is not zero, so 13 is not a factor of 826.

(c) To check whether 15 is a factor of 690, we divide 690 by 15.

$$\begin{array}{r} 46 \\ 15\overline{)690} \\ -60\downarrow \\ \hline 90 \\ -90 \\ \hline 0 \end{array}$$

Since remainder is zero, so 15 is a factor of 690.

(d) To check whether 21 is a factor of 468, we divide 468 by 21.

$$\begin{array}{r} 22 \\ 21\overline{)468} \\ -42\downarrow \\ \hline 48 \\ -42 \\ \hline 6 \end{array}$$

Since remainder is not zero, so 21 is not a factor of 468.

7. 17, 41 and 43 are the prime number of smallest 3-digit number.

$17 + 41 + 43 = 101$

Hence, 101 is the smallest 3-digit number.

The greatest 2-digit composite number is 99.

8. Look at the following pairs of numbers and determine whether they are co-prime or twin prime :

(a) $8 = 1 \times 2 \times 2 \times 2$

$9 = 1 \times 3 \times 3$

8 and 9 have no common factor other then 1, so 8 and 9 are co-prime.

(b) $\qquad 11 = 1 \times 11$

$\qquad\qquad 13 = 1 \times 13$

11 and 13 have only one composide number, so 11 and 12 are twin prime.

(c) $\qquad 15 = 1 \times 3 \times 5$

$\qquad\qquad 16 = 1 \times 2 \times 2 \times 2 \times 2$

15 and 16 have no common factor other than 1, so 15 and 16 are co-prime.

(d) $\quad 64 = 1 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2$

$65 = 1 \times 5 \times 13$

64 and 65 have no common factor other than 1, so 64 and 65 are co-prime.

(e) $\quad 71 = 1 \times 71$

$73 = 1 \times 73$

71 and 73 have only one composite number, so 71 and 73 are twin prime.

Exercise - 6.2

1. **Find the HCF of the following set of numbers by the prime factorization method :**

(a) Resolving each of the given number into prime factors, we get ;

3	15
5	5
	1

3	27
3	9
3	3
	1

Prime factors of 15 and 27 are :

$\qquad 15 = 3 \times 5$

and $\quad 27 = 3 \times 3 \times 3$

Common factors is 3. The smallest power of 3 is 1.

$\qquad \therefore \quad$ HCF of 15 and 27 is 3.

(b) Resolving each of the given number into prime factors, we get ;

2	48
2	24
2	12
2	6
3	3
	1

2	84
2	42
3	21
7	7
	1

Prime factors of 48 and 84 are ;

$$48 = 2 \times 2 \times 2 \times 2 \times 3$$

and $84 = 2 \times 2 \times 3 \times 7$

Common factors are 2 and 3. the smallest power of 2 is 2 and that of 3 is 1.

$\therefore$ HCF of 48 and 84 $= 2 \times 2 \times 3 = 12$

(c)   Resolving each of the given number into prime factors, we get;

5	55
11	11
	1

2	70
5	35
7	7
	1

Prime factors of 55 and 70 are :

$$55 = 5 \times 11$$

and $70 = 2 \times 5 \times 7$

Common factors is 5. The smallest power of 5 is 1.

$\therefore$ HCF of 55 and 70 is 5.

(d)   Resolving each of the given numbers into prime factors, we get ;

2	72
2	36
2	18
3	9
3	3
	1

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

Prime factors of 72 and 96 are :

$$72 = 2 \times 2 \times 2 \times 3 \times 3$$

and $96 = 2 \times 2 \times 2 \times 2 \times 2 \times 3$

Common factors are 2 and 3. The smallest power of 2 is 3 and that of 3 is 1.

∴ HCF of 72 and 96 $= 2^3 \times 3 = 2 \times 2 \times 2 \times 3 = 24$

(e) Resolving each of the given numbers into prime factors, we get;

```
2 | 124          2 | 142
2 |  62         71 |  71
31 |  31              |   1
    |   1
```

Prime factors of 124 and 142 are :

$124 = 2 \times 2 \times 31$

and $142 = 2 \times 71$

Common factors is 2. The smallest power of 2 is 1.

∴ HCF of 124 and 142 is 2.

(f) Resolving each of the given numbers into prime factors, we get ;

```
2 | 136          2 | 154
2 |  68          2 |  72
2 |  34          2 |  36
17 |  17          2 |  18
    |   1          3 |   9
                  3 |   3
                     |   1
```

Prime factors of 136 and 154 are :

$136 = 2 \times 2 \times 2 \times 17$

and $154 = 2 \times 2 \times 2 \times 2 \times 3 \times 3$

Common factor is 2. The smallest power of 2 is 3.

HCF of 136 and 154 is $2^3 = 2 \times 2 \times 2 = 8$

(g) Resolving each of the given numbers into prime factors, we get;

```
2 | 24          2 | 72          2 | 92
2 | 12          2 | 36          2 | 46
2 |  6          2 | 18         23 | 23
3 |  3          3 |  9             |  1
   |  1          3 |  3
                   |  1
```

Prime factors of 24, 72 and 92 are :

$24 = 2 \times 2 \times 2 \times 3$, $72 = 2 \times 2 \times 2 \times 3 \times 3$ and $92 = 2 \times 2 \times 23$

Common factor is 2. The smallest power of 2 is 2.

∴   HCF of 24, 72 and 92 is $2^2 = 2 \times 2 = 4$

(h) Resolving each of the given numbers into prime factors, we get;

2	32
2	16
2	8
2	4
2	2
	1

2	48
2	24
2	12
2	6
3	3
	1

2	144
2	72
2	36
2	18
3	9
3	3
	1

Prime factors of 32, 48 and 144 are :

$32 = 2 \times 2 \times 2 \times 2 \times 2$, $48 = 2 \times 2 \times 2 \times 2 \times 3$ and

$144 = 2 \times 2 \times 2 \times 2 \times 3 \times 3$

Common factor is 2. The smallest power of 2 is 4.

∴   HCF of 32, 48 and $144 = 2^4 = 2 \times 2 \times 2 \times 2 \times 2 = 16$

(i) Resolving each of the given numbers into prime factors, we get;

2	60
2	30
3	15
5	5
	1

2	140
2	70
5	35
7	7
	1

2	240
2	170
5	85
17	17
	1

Prime factors of 60, 140 and 240 are :

$60 = 2 \times 2 \times 3 \times 5$, $140 = 2 \times 2 \times 5 \times 7$ and $240 = 2 \times 2 \times 5 \times 17$

Common factors are 2 and 5. The smallest power of 2 is 2 and that of 5 is 1.

∴   HCF of 60, 140 and $240 = 2^2 \times 5 = 2 \times 2 \times 5 = 50$

2. **Find the HCF of the following numbers using the long division method :**

(a) HCF of 12 and 44 by long division method.

$$12 \overline{)44} (3$$
$$-36$$
$$\quad\quad 8 \overline{)12} (1$$
$$\quad\quad -8$$
$$\quad\quad\quad\quad 4 \overline{)8} (2$$
$$\quad\quad\quad\quad -8$$
$$\quad\quad\quad\quad\; 0$$

Hence, HCF of 12 and 44 is 4.

(b) HCF of 17 and 51 by long division method.

$$17 \overline{)51} (3$$
$$-51$$
$$\quad 0$$

Hence, the HCF of 17 and 51 is 3.

(c) HCF of 26 and 84 by long division method.

$$26 \overline{)84} (3$$
$$-78$$
$$\quad\quad 6 \overline{)26} (4$$
$$\quad\quad -24$$
$$\quad\quad\quad\quad 2 \overline{)6} (3$$
$$\quad\quad\quad\quad -6$$
$$\quad\quad\quad\quad\; 0$$

Hence, the HCF of 26 and 84 is 2.

(d) HCF of 40 and 90 by long division method.

$$40 \overline{)90} (2$$
$$-80$$
$$\quad\quad 10 \overline{)40} (4$$
$$\quad\quad -40$$
$$\quad\quad\quad\; 0$$

Hence, the HCF of 40 and 90 is 10.

(e) HCF of 78 and 91 by long division method.

$$78 \overline{)91} (1$$
$$-78$$
$$\quad\quad 13 \overline{)78} (6$$
$$\quad\quad -78$$
$$\quad\quad\quad\; 0$$

Hence, HCF of 78 and 91 is 13.

(f) HCF of 82 and 96 by long division method.

```
82) 96 (1
    − 82
      14) 82 (5
          − 70
            12) 14 (1
                − 12
                  2) 12 (6
                     − 12
                        0
```

Hence, the HCF of 82 and 96 is 2.

(g) HCF of 90 and 115 by long division method.

```
90) 115 (1
    − 90
      25) 90 (3
          − 75
            15) 25 (1
                − 15
                  10) 15 (1
                      − 10
                        5) 10 (2
                           − 10
                              0
```

Hence, HCF of 90 and 115 is 5.

(h) HCF of 36 and 62 by long division method.

```
36) 162 (4
    − 144
      18) 36 (2
          − 36
             0
```

Hence, the HCF of 36 and 162 is 18.

(i) First we find the HCF of 39 and 182. By long division method.

$$
\begin{array}{r}
39\overline{)182}\ (4 \\
-156 \\
\hline
26\overline{)39}\ (1 \\
-26 \\
\hline
13\overline{)26}\ (2 \\
-26 \\
\hline
0
\end{array}
$$

∴   HCF of 39 and 182 is 13.

Now, we find the HCF of 13 and 78.

$$
\begin{array}{r}
13\overline{)78}\ (6 \\
-78 \\
\hline
0
\end{array}
$$

Hence, the HCF of 39, 78 and 182 is 13.

(j)   First we find the HCF of two large numbers.

Let us take 88 and 124.

$$
\begin{array}{r}
88\overline{)124}\ (1 \\
-88 \\
\hline
36\overline{)88}\ (2 \\
-72 \\
\hline
16\overline{)36}\ (2 \\
-32 \\
\hline
4\overline{)16}\ (4 \\
-16 \\
\hline
0
\end{array}
$$

The HCF of 88 and 124 is 4. Now, we find the HCF of 4 and 52.

$$
\begin{array}{r}
13 \\
4\overline{)52} \\
-4\downarrow \\
\hline
12 \\
-12 \\
\hline
0
\end{array}
$$

Thus, the HCF of 52, 88 and 124 is 4.

(k)   First we find the HCF of two large numbers.

Let us take 209 and 399.

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$$209 \overline{)399} \big(1$$
$$- 209$$
$$190 \overline{)209} \big(1$$
$$- 190$$
$$19 \overline{)190} \big(10$$
$$- 19$$
$$0$$
$$- 0$$
$$0$$

∴   The HCF of 209 and 399 is 19. Now, we find the HCF of 19 and 57.

$$19 \overline{)57} \big(3$$
$$- 57$$
$$0$$

Hence, the HCF of 57, 209 and 399 is 19.

(l)   First we find the HCF of 64 and 128 by long division method.

$$64 \overline{)128} \big(2$$
$$- 128$$
$$0$$

∴   HCF of 64 and 128 is 64. Now, we find the HCF of 64 and 256.

$$64 \overline{)256} \big(4$$
$$- 256$$
$$0$$

Thus, the HCF of 64, 128 and 256 is 64.

Exercise - 6.3

1.   **Find the LCM of each of the following set of numbers using prime factorization method :**

(a)   LCM of 14 and 21 by prime factorization method.

2	14
7	7
	1

3	21
7	7
	1

$\therefore \quad 14 = 2 \times 7 \quad$ and $\quad 21 = 3 \times 7$

The LCM of 14 and $21 = 2 \times 3 \times 7 = 42$

(b)

2	32
2	16
2	8
2	4
2	2
	1

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

The prime factors of 32 and 96 are :

$32 = 2 \times 2 \times 2 \times 2 \times 2$ and $96 = 2 \times 2 \times 2 \times 2 \times 2 \times 3$

Hence, the LCM of 32 and $96 = 2 \times 2 \times 2 \times 2 \times 2 \times 3 = 96$

(c)

2	28
2	14
7	7
	1

2	60
2	30
3	15
5	5
	1

The prime factors of 28 and 60 are :

$28 = 2 \times 2 \times 7$ and $60 = 2 \times 2 \times 3 \times 5$

Hence, the LCM 28 and $60 = 2 \times 2 \times 3 \times 5 \times 7 = 420$

(d)

2	58
29	29
	1

2	62
31	31
	1

The prime factors of 58 and 62 are :

$58 = 2 \times 29$ and $62 = 2 \times 31$

Hence, the LCM of 58 and $62 = 2 \times 29 \times 31 = 1798$

(e)

2	56
2	28
2	14
7	7
	1

2	32
2	16
2	8
2	4
2	2
	1

The prime factors of 56 and 32 are :

$56 = 2 \times 2 \times 2 \times 7$ and $32 = 2 \times 2 \times 2 \times 2 \times 2 \times 7 = 224$

(f)

5	55
11	11
	1

5	85
17	17
	1

The prime factors 55 and 85 are :

$55 = 5 \times 11$ and $85 = 5 \times 17$

Thus, the LCM of 55 and 85 $= 5 \times 11 \times 17 = 935$

(g)

5	55
11	11
	1

5	85
17	17
	1

2	36
2	18
3	9
3	3
	1

Prime factors of 9, 15 and 36 are :

$9 = 3 \times 3$, $15 = 3 \times 5$ and $36 = 2 \times 2 \times 3 \times 3$

Thus, the LCM of 9, 15 and $36 = 3 \times 3 \times 5 \times 2 \times 2 = 180$

(h)

2	18
3	9
3	3
	1

2	52
2	26
13	13
	1

3	75
5	25
5	5
	1

The prime factors of 18, 52 and 75 are :

$18 = 2 \times 3 \times 3$, $52 = 2 \times 2 \times 13$ and $75 = 3 \times 5 \times 5$

Thus, the LCM of 18, 52 and $75 = 2 \times 2 \times 3 \times 3 \times 13 \times 5 \times 5$
$= 11700$

(i)

2	16
2	8
2	4
2	2
	1

2	76
2	38
19	19
	1

2	264
2	132
2	66
3	33
11	11
	1

The prime factors of 16, 76 and 264 are :

$16 = 2 \times 2 \times 2 \times 2$, $76 = 2 \times 2 \times 19$ and $264 = 2 \times 2 \times 2 \times 3 \times 11$

Thus, the LCM of 16, 76 and 264 = $2 \times 2 \times 2 \times 2 \times 19 \times 3 \times 11 = 10032$

2. **Find the LCM of the following using the division method :**

(a) HCF of 48 and 84 by the division method.

```
2 | 48,  84
2 | 24,  42
2 | 12,  21
2 |  6,  21
3 |  3,  21
7 |  1,   7
  |  1,   1
```

∴ The LCM of 48 and 84 = $2 \times 2 \times 2 \times 2 \times 3 \times 7 = 336$

Hence, the required LCM is 336.

(b)

```
2 | 9,  36,  45
2 | 9,  18,  24
2 | 9,   9,  12
2 | 9,   9,   6
3 | 9,   9,   3
3 | 3,   3,   1
  | 1,   1,   1
```

∴ LCM of 9, 36 and 48 = $2 \times 2 \times 2 \times 2 \times 3 \times 3 = 144$

Hence, the required LCM is 144.

(c)

```
2 | 16,  72,  84
2 |  8,  36,  42
2 |  4,  18,  21
2 |  2,   9,  21
3 |  1,   9,  21
3 |  3,   3,   1
  |  1,   1,   1
```

∴ LCM of 16, 72 and 84 = $2 \times 2 \times 2 \times 2 \times 3 \times 3 \times 7 = 1008$

Hence, the required LCM is 1008.

(d)

```
2 | 25,  40,  75
2 | 25,  20,  75
2 | 25,  10,  75
5 | 25,   5,  75
5 |  5,   1,  15
3 |  1,   1,   3
  |  1,   1,   1
```

$\therefore$ LCM of 25, 40 and 75 $= 2 \times 2 \times 2 \times 5 \times 5 \times 3 = 600$

Hence, the required LCM is 600.

(e)

```
2 | 63,  98,  112
2 | 63,  49,   56
2 | 63,  49,   28
2 | 63,  49,   14
7 | 63,  49,    7
7 |  9,   7,    1
9 |  9,   1,    1
  |  1,   1,    1
```

$\therefore$ LCM of 63, 98 and 112 $= 2 \times 2 \times 2 \times 2 \times 7 \times 7 \times 9 = 7056$

Hence, the required LCM is 7056.

(f)

```
 2 |108,  75,  230
 2 | 54,  75,  115
 3 | 27,  75,  115
 3 |  9,  25,  115
 3 |  3,  25,  115
 5 |  1,  25,  115
 5 |  1,   5,   23
23 |  1,   1,   23
   |  1,   1,    1
```

$\therefore$ LCM of 108, 75 and 230 $= 2 \times 2 \times 3 \times 3 \times 3 \times 5 \times 5 \times 23$
$= 62100$

Hence, the required LCM is 62100.

(g)

```
 3 | 90, 81, 279
 3 | 30, 27,  93
 3 | 10,  9,  31
 3 | 10,  3,  31
10 | 10,  1,  31
31 |  1,  1,  31
   |  1,  1,   1
```

∴ LCM of 90, 81 and 279 = $3 \times 3 \times 3 \times 3 \times 10 \times 31 = 25110$

Hence, the required LCM is 25110.

(h)

```
 2 | 256, 308, 528
 2 | 128, 154, 264
 2 |  64,  77, 132
 2 |  32,  77,  66
 2 |  16,  77,  33
 2 |   8,  77,  33
 2 |   4,  77,  33
 2 |   2,  77,  33
 3 |   1,  77,  33
 7 |   1,  77,  11
11 |   1,  11,  11
   |   1,   1,   1
```

∴ LCM of 256, 308 and 528 = $2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \ \times 2$ $\times 3 \times 7 \times 11 = 59136$

Hence, the required LCM is 59136.

(i)

```
 5 | 125, 650, 500
 3 |  25, 130, 100
 5 |   5,  26,  20
 2 |   1,  26,   4
 2 |   1,  13,   2
13 |   1,  13,   1
   |   1,   1,   1
```

∴ LCM of 125, 650 and 500 = $5 \times 5 \times 5 \times 2 \times 2 \times 13 = 6500$

Hence, the required LCM is 6500.

Exercise - 6.4

1.   **In each of the follow8ng pair of numbers, verify that the product of numbers is equal to the product of LCM and HCF :**

(a)

2	32
2	16
2	8
2	4
2	2
	1

2	46
23	23
	1

Prime factorization of $32 = 2 \times 2 \times 2 \times 2 \times 2$

prime factorization of $46 = 2 \times 23$

HCF of 32 and 46 is 2.

LCM of 32 and $46 = 2 \times 2 \times 2 \times 2 \times 2 \times 23 = 736$

Product of two numbers $= 32 \times 46 = 1472$

Product of their HCF and LCM $= 2 \times 736 = 1472$

$\therefore$ Product of two numbers = Product of HCF and LCM

(b)

2	58
29	29
	1

2	76
2	38
19	19
	1

Prime factorization of $58 = 2 \times 29$

prime factorization of $76 = 2 \times 2 \times 19$

HCF of 58 and 76 is 2.

LCM of 58 and $76 = 2 \times 2 \times 19 \times 29 = 2204$

Product of two numbers $= 58 \times 76 = 4408$

product of HCF and LCM $= 2 \times 2204 = 4408$

$\therefore$ Product of two numbers = Product of HCF and LCM

(c)

5	115
23	23
	1

2	250
5	125
5	25
5	5
	1

Prime factorization of $115 = 5 \times 23$

prime factorization of $250 = 2 \times 5 \times 5 \times 5$

HCF of 115 and 250 is 5.

LCM of 115 and 250 $= 5 \times 5 \times 5 \times 2 \times 23 = 5750$

Product of two numbers $= 115 \times 250 = 28750$

product of HCF and LCM $= 5 \times 5750 = 28750$

$\therefore$ Product of two numbers = Product of HCF and LCM

2. Product of two number $= 504$

$\qquad$ HCF $= 8$

$\therefore$ LCM of the two numbers $= \dfrac{\text{Product of two numbers}}{\text{HCF of two numbers}}$

$$= \dfrac{504}{8} = 63$$

Hence, required LCM is 63.

3. Product of two numbers $= 2754$

LCM of two numbers $= 162$

$\therefore$ HCF of two numbers $= \dfrac{\text{Product of two numbers}}{\text{LCM}}$

$$= \dfrac{2754}{162} = 17$$

Hence, the required HCF is 17.

4. LCM of two number $= 256$

HCF of two number $= 6$

$\qquad$ One number $= 96$

$\therefore$ Other number $= \dfrac{\text{LCM} \times \text{HCF}}{\text{One number}}$

$$= \dfrac{256 \times 6}{96} = 16$$

Hence, the other number is 16.

5. Required number is HCF of 30, 45 and 90.

$$\begin{array}{r} 30\overline{)\,45\,}(1 \\ -\,30 \\ \hline 15\overline{)\,30\,}(2 \\ -\,30 \\ \hline 0 \end{array}$$

$$\begin{array}{r} 15\overline{)\,90\,}(6 \\ -\,90 \\ \hline 0 \end{array}$$

HCF of 30, 45 and 90 = 15

Hence, the required number is 15.

6. Required number is HCF of 62, 78 and 96.

$$\begin{array}{r} 62\overline{)\,78\,}(1 \\ -\,62 \\ \hline 16\overline{)\,62\,}(3 \\ -\,48 \\ \hline 14\overline{)\,16\,}(1 \\ -\,14 \\ \hline 2\overline{)\,14\,}(7 \\ -\,14 \\ \hline 0 \end{array}$$

$$\begin{array}{r} 48 \\ 2\overline{)\,96\,} \\ -\,8\!\downarrow \\ \hline 16 \\ -\,16 \\ \hline 0 \end{array}$$

HCF of 62, 78 and 96 is 2.

7. Price of each copy will be the HCF of 56, 70 and 112.

$$\begin{array}{r} 56\overline{)\,70\,}(1 \\ -\,56 \\ \hline 14\overline{)\,56\,}(4 \\ -\,56 \\ \hline 0 \end{array}$$

$$\begin{array}{r} 14\overline{)\,112\,}(8 \\ -\,112 \\ \hline 0 \end{array}$$

HCF of 56, 70 and 112 = 14

Thus, the price of each copy is ₹14.

8. Required number is LCM of 8, 20 and 24.

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

LCM of 8, 20 and 24 = $2 \times 2 \times 2 \times 3 \times 5 = 120$

Hence, the required number is 120.

9. Required number is LCM of 36, 60 and 84.

$$
\begin{array}{r|rrr}
2 & 36, & 60, & 84 \\
\hline
2 & 18, & 30, & 42 \\
\hline
3 & 9, & 15, & 21 \\
\hline
3 & 3, & 5, & 7 \\
\hline
5 & 1, & 5, & 7 \\
\hline
7 & 1, & 1, & 7 \\
\hline
& 1, & 1, & 1 \\
\end{array}
$$

LCM of 36, 60 and 84 = $2 \times 2 \times 3 \times 3 \times 5 \times 7 = 1260$

Hence, the required number is 1260.

10. The bell ring together again will be the LCM of 12, 15 and 20.

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

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

The bell will ring again after 60 minute i.e. 1 hour. First bell ring 9 am, then next bell ring together after 1 hour i.e. 10 am.

Chapter 12 : Geometry

Exercise - 12.1

1. A line segment.

2. A plane have no boundary.

3. **Fill in the blanks :**

(a) no   (b) two   (c) ray

4. **Identify the rays, line or line segments in the following figures and then name them :**

(a)   line; $\overleftrightarrow{XX}$

(b)   A ray; $\overrightarrow{BA}$

(c)   A line segment; $\overline{XY}$

(e)   A ray; $\overrightarrow{QP}$

5. **How many line segments are there in each of the following figures ?**

(a) two (b) four (c) six (d) six.

6. **Draw :**

(a) M   N (b) A   B (c) P   Q

Exercise - 12.2

1. **Which of the following figures represent angle ?**

(a) The figure (c) and (d) represent the angle.

2. **Write the names of vertex and the arms of each of the following angles :**

Figure	Vertex	Arms
(a)	N	NM, NP
(b)	B	BA, BC
(c)	Y	YX, YZ
(d)	Q	QP, QR

3. **Write the name of the angle / angles in each of the following figures :**

(a) ∠BOA   (b) ∠PQR

(c) ∠MNP, ∠QPN   (d) ∠ROQ, ∠POQ

(e) ∠ABC, ∠BCD, ∠CDE

4. **Measure the angle in each of the following figures with the help of a Protractor and wirte**

Do Yourself.

5. **Construct angles of the following measures with the help of protractor and ruler :**

Do yourself.

Exercise - 12.3

1. **Classify each of the following figures into acute, right, obtuse of straight angles :**

(a) acute angles (b) acute angle (c) obtuse angle

(d) right angle (e) straight angle

2. **Fill in the blanks :**

(a) obtuse   (b) right   (c) acute   (d) zero

3. **Write the names or acute angles in each of the following figures :**

(a) In figure acute angle :

∠PON,   ∠NOM

(b) In figure acute angle are :

∠EAD,   ∠BAC

(c) ∠EOD,   ∠DOC,   ∠COB,   ∠BOA,   ∠AOF, ∠EOC,   ∠BOD

Chapter 10 : Triangle

Exercise - 10.1

1. **Identify triangles in the following figures :**

(a) The triangles are :   (c) and (f)

2. **Look at the following figure and fill in the blanks :**

(a) ΔRST   (b) RS, ST and TR

(c) R, S and T   (d) ∠RST, ∠STR

3. **Name all the triangles in each of the following figures :**

(a) ΔABD and ΔBCD

(b) ΔJKM, ΔKML and ΔJKL

(c) ΔPOQ, ΔDOR, ΔQOR and ΔPQR

(d) ΔSWT, ΔTWU, ΔVWU, ΔSTU and ΔVTU

The total number of angles, vertices and sides of a triangle respectively are three, three and three.

Exercise - 13.2

1. **Classify the following triangles into isosceles, scalene or equilateral :**

(a) Since, every side of given triangle are different.

So, It is *Scalene triangle*.

(b) Since, two sides of given triangle are same.

So, It is *isosceles triangle*.

(c) Since, every side of given triangle are equal.

So, It is *equilateral triangle*.

(d) Since, two sides of given triangle are equal.

So, It is *isosceles triangle*.

(e) Since, every side of given triangle are different.

So, It is *scalene triangle*.

2. **Classify the following triangles into acute, obtuse or right :**

(a) Since, every angle of given triangle is less than 90°.

So, It is *acute angle triangle*.

(b) Since, one angle of given triangle is 90°.

So, It is *right angled triangle*.

(c) Since, one angle of given triangle is greater than 90°.

So, It is *obtuse angled triangle.*

(d) Since, every of given triangle is less than 90°.

So, It is *acute angled triangle*.

(e) Since, one angle of given triangle is greater than 90°.

So, It is *obtuse angled triangle*.

3. **Fill in the blanks :**

(a) equal   (b) two (c) unequal

4. **Which of the following set of angles represent the angles of a triangle ?**

(a) Sum of the given angles $= 30° + 70° + 80° = 180°$

Since, sum of the given angles are 180°

So, It represent a triangle.

(b) Sum of the given angles $= 40° + 80° + 50° = 170°$

Since, sum of the given angles are not 180°.

So, It is not represent a triangle.

(c) Sum of the given angles $= 32° + 85° + 63° = 180°$

Since, sum of the given angles are 180°.

So, It is represent a traingle.

(d) Sum of the given angles $= 40° + 60° + 70° = 170°$

Since, sum of the given angles are not 180°.

So, It is not represent a triangle.

(e) Sum of the given angle $= 30° + 90° + 40° = 160°$

Since, sum of the given angle are not 180°.

So, It is not represent a triangle.

(f) Sum of the given angle $= 31° + 85° + 64° = 180°$

Since, sum of the given angle are 180°.

So, It is not represent a triangle.

Chapter 11 : Circle

Exercise - 11.1

1. **Radius :** The distance between the centre and any point on the circle is called radius. The line segment of its the radius of circle.

   Circumference : The length of the closed curve forming a circle is called its circumference.

2. We can draw infinite radii in a circle.

3. **Draw circle of the following radii :**

   Do yourself.

4. Do yourself.

5. **Find the diameters of the circles, whose radii are :**
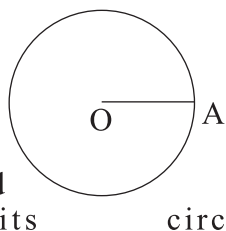
   (a) We have,

   Radius $= 3$ cm

   $\therefore$ Diametre $= 2 \times$ radius

   $= 2 \times 3$ cm $= 6$ cm

   (b) We have,

   Radius $= 4.5$ cm

   $\therefore$ Diametre $= 2 \times$ radius $= 2 \times 4.5$ cm

   $= 9$ cm.

   (c) We have,

   Radius $= 7.1$ cm

   $\therefore$ Diametre $= 2 \times$ radius

   $= 2 \times 7.1$ cm $= 42.2$ cm

(d)   We have,

Radius   = 9.6 cm

∴ Diametre   = 2 × 9.6 radius

                = 19.2 cm.

6.   **Find the radii of the circles, whose diameters are :**

(a)   We have,

Diametre   = 4 cm

∴ Radius $= \dfrac{\text{Diametre}}{2} = \dfrac{4}{2}\,cm = 2cm$

(b)   We have,

Diametre   = 6.2 cm

∴ Radius $= \dfrac{\text{Diametre}}{2}$

              $= \dfrac{6.2}{2}\,cm = 3.1cm$

(c)   We have,

Diametre   = 8.4 cm

∴ Radius $= \dfrac{\text{Diametre}}{2} = \dfrac{8.4}{2} = 4.2$ cm

(d)   We have,

Diametre   = 8.4 cm

∴ Radius $= \dfrac{\text{Diametre}}{2} = \dfrac{14.82}{2}\,cm$

             = 7.4 cm

7.   **Find the circumferences of the circles, whose diameters are:**

(a)   We know that,

Circumfrence = 3 × diameter   (approx.)

                 = 3 × 3 cm   (approx.)

                 = 9 cm   (approx.)

(b)   We know that,

Circumfrence = 3 × diameter   (approx.)

                 = 3 × 5 cm   (approx.)

                 = 15 cm   (approx.)

(c) We know that,

Circumfrence = 3 × diameter   (approx.)

= 3 × 6.5 cm

= 19.5 cm   (approx.)

(d) We know that,

Circumfrence = 3 × diameter   (approx.)

= 3 × 12.3 cm

= 36.9 cm   (approx.)

8. Write 'T' for true and 'F' for false statements :

(a) T,   (b) F,   (c) F,   (d) T.

Chapter 12 : Measurments

Exercise - 12.1

1. Fill in the blanks to make the relationships correct :

(a) 1 metre $= 100$ cm

$= 100 \times 10$ milimetres

$= 1000$ milimetres

(b) 1 hectolitre $= 10$ decalitres

$= 10 \times 1$ decalitre

$= 10 \times 10$ litres

$= 100$ litres

(c) 1 kilogram $= 1000$ grams

(d) 1 decigram $= \dfrac{1}{10}$ grams

$= 10$ centigram

(e) 1 litre $= 1000$ mililitres

(f) 1 decametre $= 10$ metres

$= 10 \times 1$ metre

$= 10 \times 10$ decimetres

$= 100$ decimetres

2. **Answer the following questions :**

   (a) metre,   (b) 1000,   (c) gram,   (d) 10,

   (e) mililitre,   (f) 10.

Exercise – 12.2

1. **Convert :**

   (a) Since, 1 m = 10 mm

   $$\therefore \quad 6\,m = 6 \times 10\,mm$$
   $$= 60\,mm$$

   (b) Since, 1 g = 10 decigram

   $$\therefore \quad 8\,g = 8 \times 10\,decigram$$
   $$= 80\,decimgram$$

   (c) Since, 1 dl = 10 cl

   $$\therefore \quad 7\,dl = 7 \times 10\,cl$$
   $$= 70\,cl$$

   (d) Since, 1 dam = 10 m

   $$\therefore \quad 15\,dam = 15 \times 10\,m$$
   $$= 150\,m$$
   $$= 150 \times 10\,dm$$
   $$= 1500\,dm$$

   (e) Since, 1 hg = 10 dog = 10 × 10 g

   $$= 100\,g$$

   $$\therefore \quad 23\,hg = 23 \times 100\,g$$
   $$= 2300\,g$$

   (f) Since, 1 kl = 1000 litres

   $$= 1000 \times 10\,dl$$
   $$= 10000\,dl$$

   $$\therefore \quad 18\,kl = 18 \times 10000\,dl$$
   $$= 180000\,dl$$

   (g) Since, 1 km = 1000 m

   $$\therefore \quad 5.035\,km = 5.035 \times 1000\,m$$
   $$= 5035\,m$$

(h) Since, 1 g $= 10\,mg$

$\therefore 9.36\,g = 9.36 \times 10\,mg$

$= 93.6\,mg$

(a) Since, 1 hl $= 10\,dol$

$= 10 \times 10\,litres = 100\,litres$

$= 100 \times 10\,dl = 1000\,dl$

$\therefore 12.53\,hl \quad = 12.53 \times 1000\,dl$

$= 12530\,dl$

2. Express each of the following as directed :

(a) 5.348 kg $= (5 + 0.348)\,kg$

$= 5\,kg + 0.348 \times 1000\,g \qquad [\therefore 1\,kg = 1000\,g]$

$= 5\,kg + 348\,g$

$= 5\,kg\,348\,g$

(b) 13.023 hg $= (13 + 0.023)\,hg$

$= 13\,hg + 0.023 \times 10\,dac$

$= 13\,hg + 0.23 \times 10\,g$

$= 13\,hg + 2.3\,g$

$= 13\,hg + 2.3 \times 10\,dg$

$= 13\,hg + 23\,dg = 13\,hg\,23\,dg$

(c) 7.9 dam $= (7 + 0.9)\,dam$

$= 7\,dam + 0.9 \times 10\,m$

$= 7\,dam + 9\,m$

$= 7\,dam\,9\,m$

(d) 10.008 km $= (10 + 0.008)\,km$

$= 10\,km + 0.008 \times 1000\,m$

$= 10\,km + 8\,m$

$= 10\,km\,8\,m$

(e) 15.37 l $= (15 + 0.37)\,l$

$= 15\,l + 0.37 \times 1000\,ml$

$= 15\,l + 370\,ml$

$= 15\,l + 370\,ml$

(f) 34.5 dal $= (34 + 0.5)\,dal$

$= 34\,dal + 0.5\,dal$

$$= 34 \, \text{dal} + 0.5 \times 10 \, l$$
$$= 34 \, \text{dal} + 5 \, l$$
$$= 34 \, \text{dal} \, 5 \, l$$

3. Convert :

(a) $700 \, \text{mm} = 70 \times 10 \, \text{mm}$

$$= 70 \times 1 \, \text{cm}$$

$$= 70 \times \frac{1}{10} \, \text{dm}$$

$$= \frac{70}{10} \, \text{dm} = 7 \, \text{dm}$$

(b) $6000 \, \text{dg} = 6000 \times \frac{1}{10} \, \text{g}$

$$= 600 \, \text{g}$$
$$= 60 \times 10 \, \text{g}$$
$$= 60 \, \text{dag}$$
$$= 6 \times 10 \, \text{dag}$$
$$= 6 \times 1 \, \text{hg}$$
$$= 6 \, \text{hg}$$

(c) $80 \, l = 80 \times \frac{1}{10} \, \text{dal}$ $[\because 1 \, \text{litre} = \frac{1}{10} \, \text{dal}]$

$$= \frac{80}{10} \, \text{dal}$$
$$= 8 \, \text{dal}$$

(d) $752 \, \text{m} = 752 \times \frac{1}{10} \, \text{dam}$ $[\because 1 \, \text{m} = \frac{1}{10} \text{dam}]$

$$= \frac{752}{10} \, \text{dam}$$

$$= 75.2 \, \text{dam}$$

(e) $90801 \, \text{cm} = 90801 \times \frac{1}{100} \, \text{m}$ $[\because 1 \, \text{cm} = \frac{1}{100} \, \text{m}]$

$$= \frac{90801}{100} \times \frac{1}{10} \, \text{dam}$$ $[\because 1 \, \text{m} = \frac{1}{10} \, \text{dam}]$

$$= \frac{90801}{1000} \, \text{dam}$$

$$= 90.801 \, \text{dam}$$

(f)   5904 dag $= 5904 \times 10\,\text{g}$ $[\because 1\,\text{dag} = 10\,\text{g}]$

$\qquad\qquad = 59040 \times \dfrac{1}{1000}\,\text{kg}$ $\left[\because 1\,\text{g} = \dfrac{1}{1000}\ \text{kg}\right]$

$\qquad\qquad = \dfrac{59040}{1000}\,\text{kg}$

$\qquad\qquad = 59.04\,\text{kg}$

(g)   60309 mg $= 60309 \times \dfrac{1}{10000}\,\text{dag}$ $\left[\because 1\,\text{mg} = \dfrac{1}{10000}\,\text{dag}\right]$

$\qquad\qquad = \dfrac{60309}{10000}\,\text{dag}$

$\qquad\qquad = 6.0309\,\text{dag}$

(h)   752 hl $= 752 \times \dfrac{1}{10}\,\text{kl}$ $\left[\because 1\,\text{hl} = \dfrac{1}{10}\,\text{kl}\ \right]$

$\qquad\qquad = \dfrac{752}{10}\,\text{kl}$

$\qquad\qquad = 75.2\,\text{kl}$

(i)   16035 cl $= 16035 \times \dfrac{1}{10000}\,\text{hl}$ $\left[\because 1\,\text{cl} = \dfrac{1}{10000}\,\text{hl}\right]$

$\qquad\qquad = \dfrac{16035}{10000}\,\text{hl}$

$\qquad\qquad = 1.6035\,\text{hl}$

4.   Express each of the following as directed :

(a)   3526 g $= (3000 + 526)\,\text{g}$

$\qquad\qquad = \dfrac{3000}{1000}\,\text{kg} + 526\,\text{g}$

$\qquad\qquad = 3\,\text{kg} + 526\,\text{g}$

$\qquad\qquad = 3\,\text{kg}\ 526\,\text{g}$

(b)   205 cg $= (200 + 5)\,\text{cg}$

$\qquad\qquad = 200\,\text{cg} + 5\,\text{cg}$

$\qquad\qquad = \dfrac{200}{100}\,\text{g} + 5\,\text{cg}$ $\left[\because 1\,\text{cg} = \dfrac{1}{100}\,\text{g}\right]$

$\qquad\qquad = 2\text{g} + 5\,\text{cg}$

$$= 2\,g\,5\,cg$$

(c) $815\,l$ $\quad = (800 + 15)\,l$

$\qquad\qquad = 800\,l + 15\,l$

$\qquad\qquad = \dfrac{800}{100}\,\text{hl} + 15\,l \qquad\qquad\qquad [\because\ 1\,l = \dfrac{1}{100}\ \text{hl}]$

$\qquad\qquad = 8\,\text{hl} + 15\,l$

$\qquad\qquad = 8\,\text{hl}\,15\,l$

(d) $50392\,\text{ml} = (50000 + 392)\,\text{ml}$

$\qquad\qquad = 50000 + 392\,\text{ml}$

$\qquad\qquad = \dfrac{50000}{10000}\,\text{dal} + 392\,\text{ml} \qquad [\because\ \text{ml} = \dfrac{1}{10000}\ \text{dal}]$

$\qquad\qquad = 5\,\text{dal} + 392\,\text{ml}$

$\qquad\qquad = 5\,\text{dal}\,392\,\text{ml}$

(e) $3020\,\text{dm} = (3000 + 20)\,\text{dm}$

$\qquad\qquad = 3000\,\text{dm} + 20\,\text{dm}$

$\qquad\qquad = \dfrac{3000}{1000}\,\text{hm} + \dfrac{20}{10}\,\text{m} \qquad [\because\ 1\,\text{dm} = \dfrac{1}{1000}\ \text{hm}$

$\qquad\qquad\qquad\qquad\qquad\qquad\qquad \text{and } 1\,\text{dm} = \dfrac{1}{10}\ \text{m}\ ]$

$\qquad\qquad = 3\,\text{hm} + 2\,\text{m}$

$\qquad\qquad = 3\,\text{hm}\,2\,\text{m}$

(f) $60057\,\text{cm} = (60000 + 57)\,\text{cm}$

$\qquad\qquad = 60000\,\text{cm} + 57\,\text{cm}$

$\qquad\qquad = \dfrac{60000}{10000}\,\text{hm} + 57\,\text{cm} \qquad [\because 1\,\text{cm} = \dfrac{1}{10000}\ \text{hm}]$

$\qquad\qquad = 6\,\text{hm} + 57\,\text{cm}$

$\qquad\qquad = 6\,\text{hm}\,57\,\text{cm}$

Exercise - 10.3

1. **Add.**

   (a)

cm	mm
13	5
+ 8	6
22	1

   Hence, 13 cm 5 mm + 8 cm 6 m = 22 cm 1 mm

   (b)

dam	dm
25	362
+ 142	293
167	655

   Hence, 25 dam 36 dm + 142 dam 29 dm = 167 dam 65 dm

   (c)

hl	dl
205	362
+ 93	293
298	655

   Hence, 205 hl 362 dl + 93 hl 293 dl = 298 hl 655 dl

   (d)

kg	dg
534	5304
+ 259	2851
793	8155

   Hence, 534 kg 5304 dg + 259 kg 2851 dg = 793 kg 8155 dg

   (e)

m	mm
6	404
+ 12	508
	613
19	525

   Hence, 6 , 404mm + 12 m 508 mm + 613 mm = 19 m 525 mm

2. **Subtract :**

   (a)

l	ml
84	421
− 25	326
59	95

   Hence, 6 m 404 mm + 12 m 508 mm + 613 mm = 19 m 525 mm

   (b)

kg	g
29	635
− 13	520
16	115

   Hence, 29 kg 635 g − 13 kg 520 g = 16 kg 115 g

(c)

dag	dg
52	07
− 24	36
27	71

Hence, 52 dag 7 dg − 24 dag 36 dg = 27 dag 71 dg

(b)

hl	dl
163	085
− 35	523
127	562

Hence, 163 hl 85 dl − 35 hl 523 dl = 127 hl 562 dl

3. Length of the cloth of one kind   =   9 m   12 cm
    Length of the cloth of another kind   = + 13 m   65 cm
                                                                    22 m   77 cm

    Hence, Reshma bought the cloths 22 m 77 cm.

4. Weight of first person   =   48 . 56 kg
    Weight of second person   =   65 . 32 kg
    Weight of third person   = + 54 . 85 kg
    Total weight of three person   =   168 . 73 kg

    Hence, the total weight of three persons is 168.73 kg.

5. Total milk in the container   =   63 . 425 l
    The milk taken away for it   = − 25 . 520 l
                                                      37 . 905 l

    Hence, Left amount of milk in container is 37.905 l.

6. Length of the longer train   =   204 . 450 m
    Difference between the lengths of two train = − 23 . 526 m
                                                                      180 . 924 m

    Hence, the length of the shorter train is 180.924 m.

7. Capacity of one container   =   12 kl   80 dl
    Capacity of second container   =   28 kl   39 dl
    Capacity of third container   = + 83 kl   95 dl
                                                        125 kl   14 dl

    Hence, the total capacity of three containers 125 kl 14 dl.

8. Weight of Rita =   65.036 kg
    Weight of Reena   = Weight of Rita − 8.295 kg
                              = 65.036 kg − 8.295 kg
                              = (35.036 − 8.295) kg = 56.791 kg

    Hence, the weight of Reena is 56.791 kg

Chapter 13 : Perimeter, Area and Volume

Exercise - 13.1

1. **Find the perimeter of the rectangle in which :**

    (a) Here, $l = 9$ cm and $b = 7$ cm

    $\therefore$ Perimeter of the rectangle
    $$\begin{aligned} &= 2(l+b) \\ &= (9+7)\,cm \\ &= 2 \times 16\,cm \\ &= 32\,cm \end{aligned}$$

    (b) Here, $l = 11.5$ cm and $b = 9$ cm

    $\therefore$ Perimeter of the rectangle
    $$\begin{aligned} &= 2(l+b) \\ &= 2(11.5+9)\,cm \\ &= 2 \times 20.5\,cm \\ &= 41\,cm \end{aligned}$$

    (c) Here, $l = 12.5$ m and $b = 7.3$ m

    $\therefore$ Perimeter of the rectangle
    $$\begin{aligned} &= 2(l+b) \\ &= 2(12.5+7.3)\,m \\ &= 2\,(19.8)\,m \\ &= 39.6\,cm \end{aligned}$$

    (d) Here, $l = 35.2$ m and $b = 23$ m

    $\therefore$ Perimeter of the rectangle
    $$\begin{aligned} &= 2(l+b) \\ &= 2(35.2+23)\,m \\ &= 2(58.2)\,m \\ &= 116.4\,m \end{aligned}$$

2. **Find the perimeter of the square in which each side is as follows :**

    (a) Here, side $= 6$ cm

    Perimeter of the square
    $$\begin{aligned} &= 4 \times side \\ &= 4 \times \quad cm \end{aligned}$$
    $= 24$ cm

    (b) Here, side $= 9.5$ cm

    Perimeter of the square
    $$\begin{aligned} &= 4 \times side \\ &= 4 \times 9.5\,cm \\ &= 38\,cm \end{aligned}$$

(c) Here, side = 19.5 m

Perimeter of the square   = 4 × 145 m

                        = 78 m

(d) Here, side = 25.4 m

Perimeter of the square   = 4 × side

                        = 4 × 25.4 cm

                        = 101.6 m

3. **Find the breadth of the rectangle in which :**

(a) Perimeter of the rectangle, P = 42 cm

Length of the rectangle, l = 12 cm

$$\text{Breadth (b) of the rectangle} = \left(\frac{P}{2} - l\right)$$

$$= \left(\frac{42}{2} - 12\right) \text{cm}$$

$$= (21 - 12) \text{ cm}$$

$$= 9 \text{ cm.}$$

(b) Here, P = 64 cm and l = 19 cm

$$\therefore \text{Breadth of the rectangle} = \left(\frac{P}{2} - l\right)$$

$$= \left(\frac{64}{2} - 19\right)$$

$$= (32 - 19) \text{ cm}$$

$$= 13 \text{ cm}$$

(c) Here, P = 86 dm and l = 29 dm

$$\therefore \text{Breadth of the rectangle} = \left(\frac{P}{2} - 1\right)$$

$$= \left(\frac{86}{2} - 29\right) \text{dm}$$

$$= (43 - 29) \text{ dm}$$

$$= 14 \text{ dm}$$

(d) Here, P = 118 and l = 44 m

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$\therefore$ Breadth of the rectangle $= \left(\dfrac{P}{2} - 1\right)$

$$= \left(\dfrac{118}{2} - 44\right) m$$
$$= (59 - 44) \ m$$
$$= 15 \ m$$

4. Find the each side of the square, whose perimeter is as follows :

(a) Perimeter of the square $= 44 \ dm$

$\therefore$ Side of the square $= \dfrac{\text{Perimeter}}{4}$

$$= \dfrac{44}{4} \ dm$$

$$= \quad 11 \ dm$$

(b) Perimeter of the square $= 62 \ cm$

$\therefore$ Side of the square $= \dfrac{\text{Perimeter}}{4}$

$$= \dfrac{62}{4} \ cm$$
$$= 15.5 \ cm$$

(c) Perimeter of the square $= 101 \ cm$

$\therefore$ Side of the square $= \dfrac{\text{Perimeter}}{4}$

$$= \dfrac{101}{4} \ cm$$

$$= 25.25 \ cm.$$

(d) Perimeter of the square $= 97 \ m$

$\therefore$ Side of the square $= \dfrac{\text{Perimeter}}{4}$

$$= \dfrac{97}{4} \ m$$

$$= 24.25 \ cm.$$

5. Length of the park = 52 m and breadth of the park = 25 m

∴ Perimeter of the rectangular park $= 2\,(\text{lengrth} + \text{breadth})$

$$= 2(52 + 25)\,\text{m}$$
$$= 2(77)\,\text{m}$$
$$= 154\,\text{m}$$

Hence, the required perimeter is 154 m.   Ans.

6. Side of the square plot = 36.2 dam

∴ Perimeter of the squar plot $= 4 \times \text{side}$

$$= 4 \times 36.2\,\text{dam}$$
$$= 144.8\,\text{dam}$$

Hence, the required perimeter is 144.8 dam.   Ans.

7. Length of the rectangular field, l = 103 m

Perimeter of the rectangular field, P = 352 m

∴ Breadth (b) of the rectangular field $= \left(\dfrac{P}{2} - 1\right)$

$$= \left(\dfrac{352}{2} - 103\right)$$
$$= (176 - 103)\,\text{m}$$
$$= 73\,\text{m}$$

Hence, the required breadth is 73.   Ans.

8. Let each side of a carom-board be x cm.

Perimeter of carom-board $= 322$ cm

∴ Length of each side of carom-board $= \dfrac{\text{Perimeter}}{4}$

$$= \dfrac{322}{4}\,\text{cm}$$
$$= 80.5\,\text{cm}$$

Hence, the required length is 80.5 cm Ans.

Exercise - 11.2

1. Which of the shaded regions has greater area ?

(a) In the given figure first figure has greater area.

(b) In the figure second figure has greater area.

(c) In the given figure first figure has greater area.

2. **Find the area of the figures drawn on a square paper by counting squares :**

(a) (i) Number of complete squares enclosed by the figure $= 7$

(ii) Number of more than half squares enclosed by the figure $= 8$

(iii) Number of one-fourth squares enclosed by the figure $= 4$

Hence, area of the figure $= \left(7 + 8 + \dfrac{1}{4} \times 4 \right)$ sq.cm

$= (15 + 1)$ sq. cm

$= 16$ sq. cm

(b) Steps :

(i) Number of complete squares enclosed by the figure $= 5$

Hence, area of the figure $= 5$ sq. cm

(c) Number of the complete squares enclosed by the figure $= 12$

Hence, area of the figure $= 12$ sq. cm

(d) Steps :

(i) Number of the complete squares enclosed by the figure $= 4$

(ii) Number of more the half squares enclosed by the figure $= 1$

(iii) Number of half squares enclosed by the figure $= 4$

Hence, area of the figure $= \left(4 + 1 + \dfrac{1}{2} \times 4 \right)$ sq.cm

$= (5 + 2)$ sq. cm

$= 7$ sq. cm

Exercise - 11.3

1. **Find the area of the rectangle in which :**

(a) Here, $1 = 8$ cm and $b = 5$ cm

Area of the rectangle $= 1 \times b$

$= 8 (m \times 5)$ cm $= (8 \times 5)$ sq. cm

$= 40$ sq. cm.

(b) Here, l = 11 dm and b = 7 dm

Area of the rectangle = l × b

$$= (11 \times 7) \text{ sq. dm}$$
$$= 77 \text{ sq. dm.}$$

(c) Here, l = 7.5 m and b = 6 m

Area of the rectangle = l × b

$$= 7.5 \text{ m} \times 6 \text{ m}$$
$$= (7.5 \times 6) \text{ sq.m}$$
$$= 45 \text{ sq.m}$$

(d) Here, l = 12.3 m and b = 8.1 m

Area of the rectangle = l × b

$$= 12.3 \text{ m} \times 8.1 \text{ m}$$
$$= (12.3 \times 8.1) \text{ sq. m}$$
$$= 99.63 \text{ sq.m}$$

(e) Here, l = 81 cm and b = 23 cm

Area of the rectangle = l × b

$$= 81 \text{ cm} \times 23 \text{ cm}$$
$$= (81 \times 23) \text{ sq. cm}$$
$$= 1863 \text{ sq. cm}$$

(f) Here, l = 29.1 cm and b = 12.16 cm

Area of the rectangle = l × b

$$= 29.1 \times 12.16) \text{ sq. cm}$$
$$= 353.856 \text{ sq. cm.}$$

2. **Find the area of the square, whose each side is a follows :**

(a) Side of the square = 8 dm

∴ Area of the square $= (\text{side})^2$

$$= (8)^2 \text{ sq dm}$$
$$= 64 \text{ sq dm}$$

(b) Side of the square = 13 cm

∴ Area of the square $= (\text{side})^2$

$$= (13)^2 \text{ sq cm}$$
$$= 169 \text{ sq dm}$$

(c) Side of the square = 26 dm

∴ Area of the square $= (\text{side})^2$

$$= (26)^2 \text{ sq cm}$$
$$= 676 \text{ sq dm}$$

(d)   Side of the square $= 12.3$ m

$\therefore$ Area of the square $= (\text{side})^2$
$$= (12.3)^2 \text{ sq cm}$$
$$= 151.29 \text{ sq dm}$$

(e)   Side of the square $= 25.21$ m

$\therefore$ Area of the square $= (\text{side})^2$
$$= (25.21)^2 \text{ sq m}$$
$$= 635.5441 \text{ sq m}$$
$$= 64 \text{ sq dm}$$

(f)   Side of the square $= 4.47$ m

$\therefore$ Area of the square $= (\text{side})^2$
$$= (4.47)^2 \text{ sq m}$$
$$= 19.9809$$

3.   Length of the rectangular Park $= 43$ m and Breadth $= 29$ m

$\therefore$ Area of the rectangular Park $=$ length $\times$ breadth
$$= 43 \times 29 \text{ sq m}$$
$$= 1247 \text{ sq m}$$

Hence, Area of the rectangular Park is 1247 sq m.   Ans.

4.   Side of the square field $= 83$ m

$\therefore$ Area of the square field $= (\text{side})^2$
$$= (83)^2 \text{ sq m}$$
$$= 6889 \text{ sq m}$$

Hence, the required area is 9889 sq m.   Ans.

5.   Length of the rectangular field $= 103$ m and breadth $= 67$ m

$\therefore$ Area of the rectangular field $=$ length $\times$ breadth
$$= 103 \times 67 \text{ sq m}$$
$$= 6901 \text{ sq m}$$

$\therefore$ Cost of 1 square metre $\qquad = 25$ Paise

$\therefore$ Cost of 6901 square metre $\quad = (25 \text{ n } 6901)$ Paise
$$= 172525 \text{ Paise}$$

$$= ₹ \frac{172525}{100}$$
$$= ₹ 1725.25$$

Hence, area of square fields is 6901 sq m and cost of Ploughs is ₹ 1725.25 Ans.

6. Here, Breadth = 13 dm and Perimeter = 68 dm

∴ Length of the rectangle
$$= \frac{\text{Perimeter}}{2} - \text{Breadth}$$
$$= \left(\frac{68}{2} - 13 \right) \text{dm}$$
$$= (34 - 13) \text{ dm}$$
$$= 21 \text{ dm}$$

Length = 21 dm and breadth = 13 dm

∴ Area of the rectangle = length × breadth
$$= 21 \times 13 \text{ sq dm}$$
$$= 273 \text{ sq dm.}$$

7. Let the side of square chess-board be x cm.
Perimeter of square chess-board = 92 cm.

Side of the chess-board (x)
$$= \frac{\text{Perimeter}}{4}$$
$$= \frac{92}{4} \text{ cm}$$
$$= 23 \text{ cm}$$

∴ Area of chess-board = (side)^2 = (23)^3 sq cm
$$= 529 \text{ sq cm}$$

Hence, the area of square chess-board is 529 sq cm.

8. Length of the rectangle = 8.9 m and breadth = 6.3 m
Area of the rectangle = length × breadth
$$= 8.9 \times 6.3 \text{ sqm} = 56.07 \text{ sqm}$$

Side of the square = 7.2 m
Area of the square = (side)2 = (7.2)2 sqm

$$= 51.84 \, \text{sqm}$$

Since $56.07 > 51.84$

$\therefore$ Area of rectangle $>$ area of square

Difference of two areas $= (56.07 - 51.84) \, \text{sq cm} = 4.23 \, \text{sq cm}$

Hence, the are of rectangle 4.23 sq cm more than area of square.

Exercise - 13.4

1. **Find the volume of the cuboid in which :**

    (a) $l = 8 \, \text{cm}$, $b = 4 \, \text{cm}$ and $h = 3 \, \text{cm}$

    Volume of the cuboid $= l \times b \times h$
    $$= 8 \times 4 \times 3 \, \text{cm}^3$$
    $$= 96 \, \text{cm}^3.$$

    (b) Here, $l = 12 \, \text{cm}$, $b = 9 \, \text{cm}$ and $h = 5 \, \text{cm}$

    Volume of the cuboid $= l \times b \times h$
    $$= 12 \times 9 \times 5 \, \text{cm}^3$$
    $$= 540 \, \text{cm}^3.$$

    (c) Here, $l = 4 \, \text{m}$, $b = 3.5 \, \text{m}$ and $h = 2 \, \text{m}$

    Volume of the cuboid $= l \times b \times h$
    $$= 4 \times 3.5 \times 2 \, \text{m}^3$$
    $$= 28 \, \text{m}^3.$$

    (d) $l = 14 \, \text{dm}$, $b = 6.5 \, \text{dm}$ and $h = 3.5 \, \text{dm}$

    Volume of the cuboid $= l \times b \times h$
    $$= 12 \times 6.5 \times 3.5 \, \text{dm}^3$$
    $$= 318.5 \, \text{cm}^3.$$

    (e) Here, $l = 7.2 \, \text{dm}$, $b = 6.9 \, \text{dm}$ and $h = 3 \, \text{dm}$

    Volume of the cuboid $= l \times b \times h$
    $$= 7.2 \times 6.9 \times 3 \, \text{dm}^3$$
    $$= 149.04 \, \text{cm}^3.$$

    (f) Here, $l = 26 \, \text{m}$, $b = 19.5 \, \text{m}$ and $h = 13.2 \, \text{m}$

    Volume of the cuboid $= l \times b \times h$
    $$= 26 \times 19.5 \times 13.2 \, \text{m}^3$$
    $$= 6692.4 \, \text{m}^3.$$

2. **Find the volume of the cube, whose each side is as follows :**

(a) Here, side of the cube $= 4 \, dm$
Volume of the cube $= (Side)^3$
$$= (4)^3 \, dm^3$$
$$= 64 \, dm^3$$

(b) Here, side of the cube $= 7 \, cm$
Volume of the cube $= (Side)^3$
$$= (7)^3 \, cm^3$$
$$= 343 \, cm^3$$

(c) Here, side of the cube $= 12 \, m$
Volume of the cube $= (Side)^3$
$$= (12)^3 \, m^3$$
$$= 1728 \, m^3$$

(d) Here, side of the cube $= 20 \, cm$
Volume of the cube $= (Side)^3$
$$= (20)^3 \, cm^3$$
$$= 8000 \, cm^3$$

(e) Here, side of the cube $= 6.3 \, cm$
Volume of the cube $= (Side)^3$
$$= (6.3)^3 \, cm^3$$
$$= 250.047 \, cm^3$$

(f) Side of the cube $= 5.1 \, m$
Volume of the cube $= (Side)^3$
$$= (5.1)^3 \, m^3$$
$$= 132.651 \, m^3$$

(g) Side of the cube $= 9.4 \, dm$
Volume of the cube $= (Side)^3$
$$= (9.4)^3 \, dm^3$$
$$= 830.584 \, dm^3$$

(h) Side of the cube $= 7.5 \, m$
Volume of the cube $= (Side)^3$
$$= (7.5)^3 \, m^3$$
$$= 421.875 \, m^3$$

3. Here, Length (l) $= 10 \, cm$, Breadth (b) $= 8.5$ and height (h) $= 3.5$
\ Volume of the cuboid $= 1 \times b \times h$

$$= 10 \times 8.5 \times 3.5 \text{ cm}^3$$
$$= 297.5 \text{ cm}^3$$

Hence, the volume of cuboid is 297.5 cm^3. Ans.

4. Here, side of the cube $= 8.7 \text{ m}$

$\therefore$ Volume of the cube $= (\text{Side})^3$
$$= (8.7)^3 \text{ m}^3$$
$$= 658.503 \text{ m}^3$$

Hence, volume of the cube is 658.503 cm^3. Ans.

Chapter 14 : Simple Patterns

Exercise - 14.1

1. **Identify the pattern and fill in the blanks :**
   (a) 8888, 88888   (b) 555, 666

2. **Look at the pattern in the pair of numbers given below and write the next three number pairs in each :**
   (a) The next three number pairs in each :
       (20+5, 25+5), (20+5+5, 25+5+5), (20+5+5+5, 25+5+5+5)
       Or (25, 30),   (30, 35),   (35, 40)
   (b) The next three number pairs in each :
       (4+1, 10+2), (4+1+1, 10+2+2), (4+1+1+1, 10+2+2+2)
       Or (5, 12),   (6, 14),   (7, 16)
   (c) The next three number pairs in each :
       (4+1, 11+3), (4+1+1, 11+3+3), (4+1+1+1, 11+3+3+3)
       Or (5, 14),   (6, 17),   (7, 20)

3. **Observe the following pattern and write the next three steps :**
   (a) The next three steps are :
       $1234 \times 8 + 4 \quad = 9876$
       $12345 \times 8 + 5 \quad = 98765$
       $123456 \times 8 + 6 \ = 987654$
   (b) The next three steps are :
       $(9 \times 4321) - 1 \quad = 38888$
       $(9 \times 54321) - 1 \quad = 488888$
       $(9 \times 654321) - 1 \ = 5888888$

(c) The next three steps are :

$(9 \times 1000) + 1000 \quad = 10000$

$(9 \times 10000) + 10000 \quad = 100000$

$(9 \times 100000) + 100000 \quad = 1000000$

(d) The next three steps are :

$(9 \times 1234) + 5 \quad = 11111$

$(9 \times 12345) + 6 = 111111$

$(9 \times 123456) + 7 = 1111111$

4. Discover the pattern in each and extend it to three more places :

(a) We see the pattern :

$3 \times 1 + 0 = 3$

$3 \times 3 + 3 = 12$

$3 \times 5 + 6 = 21$

$3 \times 7 + 9 = 30$

$3 \times 9 + 12 = 39$

$3 \times 11 + 15 = 48$

$3 \times 13 + 18 = 57$

Hence, the next three numbers are 39, 48 and 57.

(b) We see the pattern :

$4 + 0 = 4$

$4 + 4 = 8$

$8 + 8 = 16$

$16 + 16 = 32$

$32 + 32 = 64$

$64 + 64 = 128$

$128 + 128 = 256$

Hence, the next three numbers are 64, 128 and 256.

(c) $20 \times 2 + 10 = 50$

$50 \times 2 + 10 = 110$

$110 \times 2 + 10 = 230$

$230 \times 2 + 10 = 470$

$470 \times 1 + 10 = 950$

$950 \times 2 + 10 = 1910$

Hence, the next three numbers are $470, 950$ and 1910.

(d) We see the pattern :

$(1)^2 = 1 \times 1 = 1$

$(2)^2 = 2 \times 2 = 4$

$(3)^3 = 3 \times 3 = 9$

$(4)^2 = 4 \times 4 = 16$

$(5)^2 = 5 \times 5 = 25$

$(6)^2 = 6 \times 6 = 36$

$(7)^2 = 7 \times 7 = 49$

$(8)^2 = 8 \times 8 = 64$

(e) We see the pattern :

$64 \div 2 = 32$

$32 \div 2 = 16$

$16 \div 2 = 8$

$8 \div 2 = 4$

$4 \div 2 = 2$

Hence, the next three numbers are $8, 4$ and 2.

Chapter 15 : Data Handling

Exercise - 15

1. **Represent the above data in tabular form and, then answer the following questions:**

Let us how present the given data in an ascending order as shown below :

4	4	5	5	6	6	7	8	8	8	8	8
9	9	10	11	11	11	11	12	13	13		

When the same data is presented in a grouped form in a table we have :

Age (in years)	No. of children
4	2
5	2
6	2
7	1

8	5
9	2
10	1
11	4
12	1
13	2

(a) 5 childrens are 8 years old.

(b) 2 childrens are 13 years old.

(c) Number of childerns younger than 6 years = 2 + 2 = 4 childrens

(d) Number of childrens between 6 and 11 years old = 1 + 5 + 2 + 1 = 9 children

2. **Show the following information in the form of a pictograph :**
Do yourself.

3. **Data collected for the most popular subjects among the students of classes I, II and III are given below :**
Do yourself.

4. Let us draw a bar graph for the given information :

5. **Study the bar graph carefully and answer the given questions :**

(a) 300 toys are manufactured on Saturday.

(b) The maximum toys are manufactured on Thursday.

(c) 700 toys are manufactured on wednesday.

(d) 400 toys are manufactured on Friday.

(e) Total number of toys are manufactured in all six class
= (800 + 500 + 700 + 900 + 400 + 300) toys = 3600 toys