New

MATHEMATICS

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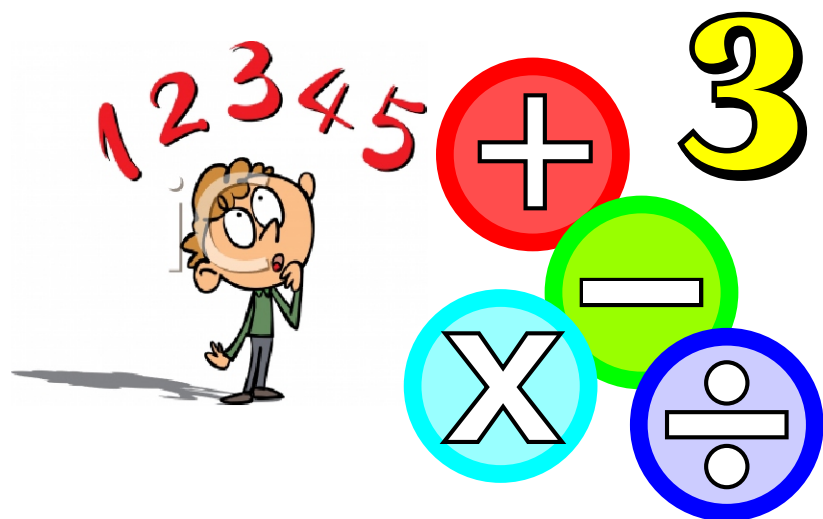
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CHAPTER NO.1
NATURAL NUMBERS

1.1 — Counting upto Lac

a. In earlier classes you have learnt how to count upto 1000 and you know to write the numbers and their place values i.e

Example

Example	The Number	Place Value			
		Thousands	Hundreds	Tens	Units
a	3125	3	1	2	5
b	1524	1	5	2	4
c	4876	4	8	7	6
d	5790	5	7	9	0

Example-a
The number is 3125 = 3 Thousand + 1 Hundred + 2 ten + 5 units. We can write in words as "Three Thousand one hundred twenty five".

Example-b
The number is 1524 = 1 Thousand + 5 Hundred + 2 ten + 4 units. We can write it in words as "One Thousand Five hundred twenty four".

Example-c

The number is 4876 = 4 Thousand + 8 Hundred + 7 ten + 6 units. We can write in words as "Four Thousand Eight hundred Seventy Six".

Example-d

h u n d r e d

The number is 5790 = 5 Thousand + 7 Hundred + 9 ten + 0 units. We can write it in words as "Five Thousand Seven Ninety".

Exercise 1.1

a.   Writ the following numbers in terms of place values:

One is done for you.

S.No.	The Number	Place Value			
		Thousands	Hundreds	Tens	Units
1	1434	1	4	3	4
2	2930	2	9	3	0
3	6532	6	5	3	2
4	3216	3	2	1	6
5	5218	5	2	1	8
6	9325	9	3	2	5
7	3621	3	6	2	1
8	2005	2	0	0	5
9	2156	2	1	5	6
10	7321	7	3	2	7
11	4218	4	2	1	8
12	8635	8	6	3	5
13	3528	3	5	2	8
14	2631	2	6	3	1
15	6328	6	3	2	8

b. Writ the following numbers in figures:-

One is done for you.

S.No.	Place Value	
	Number in words	Figure
1	Three Thousand, four hundred and thirty two.	3432
2	Seven Thousand and fifty.	7050
3	Two thousand six hundred and sixty one.	2661
4	Nine Thousand, eight hundred and forty four.	9844
5	Six thousand, four hundred and twenty three.	6423
6	Five thousand, six hundred and eighty nine.	5689
7	Eight thousand, two hundred and thirteen.	8273
8	One thousand and forty seven.	1047
9	Six thousand and eight.	6008
10	Five thousand, six hundred and one.	5601
11	Six Thousand six hundred and six.	6606
12	Three thousand eight hundred and twenty six.	3826
13	Four thousand three hundred and sixty one.	4361
14	Nine Thousand two hundred and twenty one.	9221
15	Eight thousand two hundred and thirty one.	8231

Now, we learn about the numbers 10,000 or greater than ten thousand in terms of place values.

The number next to 9999 is 10,000, it is written as:

Ten Thousand	Thousand	Hundred	Tens	Units
1	0	0	0	0

or

Number in words	In figure	Place Value				
		T-Th	Th	H	T	U
Twenty thousand, four hundred and eighty five	20485	2	0	4	8	5
Sixty four thousand, seven hundred and ninety one.	64791	6	4	7	9	1
Fifty five thousand, five hundred and fifty five.	55555	5	5	5	5	5

The number next to 99999 is 10,0000 that is one hundred thousand. It is also read as one lac. In term of place value, it is written as:

Lacs/ H-Th	Ten Thousand	Thousand	Hundred	Tens	Units
1	0	0	0	0	0

c. Writ the following numbers in words:-
   Two are done for you.

S.No.	Place Value	
	Figure	Number in words
1	71414	Seventy one thousand, four hundred and fourteen
2	23947	Twenty three thousand, nine hundred and forty seven.

3	56741	Fifty Six thousand, seven hundred and forty one.
4	59207	Fifty nine thousand, two hundred and seven.
5	176312	One Lac, Seventy Six thousand, three hundred and twelve
6	42906	Forty two thousand, nine hundred and six.
7	50213	Fifty thousand, two hundred and thirteen.
8	60047	Sixty thousand and forty seven.
9	78654	Seventy eight thousand, six hundred and fifty four.
10	34567	Thirty four thousand, five hundred and sixty seven.

d. Writ the following numerals (figures)
   One is done for you.

S.No.	Place Value	
	Number in words	Figure
1	Fourteen thousand, five hundred and thirty.	14530
2	Fifty six thousand, four hundred and twelve	56412
3	Seventy four thousand six hundred and eighty two.	74682

4	Eighty three thousand and twenty five.	83025
5	Ninety two thousand and twenty seven.	92007
6	One lac, eleven thousand one hundred and eleven.	111111
7	Three lac, seventy one thousand two hundred and forty four.	371244
8	Five lac, sixty three thousand and seventy one.	506371
9	Eighty lac, three hundred and fifty two.	803521
10	Seven lac, nine thousand one hundred and twenty six.	709126

e. Complete the following boxes.

Numbers	T-th	Th	H	T	U
Twelve thousand, twenty five	1	2	0	2	5
Twenty eight thousand, two hundred	2	8	2	0	0
Thirty nine thousand, Two hundred	3	9	2	0	0
Fifty thousand, eleven	5	0	0	1	1
Ninety nine thousand, nine	9	9	0	0	9
Eighty thousand, nine hundred eighty	8	0	9	8	0
Seventy five thousand five hundred	7	5	5	0	0
Eighty seven thousand seven	8	7	0	0	7
Ninety six thousand thirteen	9	6	0	1	3

ACTIVITY

Look at the numbers

361	631	552	622	325	516

Answer the following:

361	325

(a) Which numbers have three hundreds?

(b) Which numbers have two tens?

(c) Which numbers have one unit?

(d) Which is the largest number?

(e) Which number is the smallest?

1.2 The smallest and the greatest 4, 5, 6 Digit numbers:

We know that the smallest one digit number is 1 and the greatest one digit number is 9.

Similarly, the smallest two digit number is 10 and the greatest two digit number is 99.

We can also make smallest and greatest numbers from the given digits.

Example The smallest and greatest numbers consisting of digits 0, 6, 2, 4 are: 2046 and 6420.

Exercise 1.2

1. Fill in the blanks:

(a) The smallest 3 digit number is ____100____ .

(b) The greatest 3 digit number is ___999____.

(c) The smallest 4 digit number is____1000____.

(d) The greatest 4 digit number is_____9999____.

(e) The smallest 5 digit number is ___10000___ .

(f) The greatest 5 digit number is ___99999___ .

(g) The smallest 6 digit number is ___100000___ .

2. What is the smallest and the greatest number consisting of the digit 6, 1, 2, 3?

Solution:

= Greastest number = 1,2,6

= Smallest number = 6,2,1

3. What is the greatest and the smallest number consisting of the digits 0, 1, 2, 4?

Solution:

= Greastest number = 4,2,1,0

= Smallest number = 0,1,2,4

4. What is the smallest and the greatest number consisting of the digits 1, 7, 9, 8, 2, 3?

Solution:

= Smallest number= 1,2,3,7,8,9

= Greastest number = 9,8,7,3,2,1.

1.3 Even and Odd Natural Numbers:

I am Odd

if the digits at units place are:

1,3,5,7,9

I am Even

if the digits at units place are:

0,2,4,6,8

Look at the following chart:

1	11	21	31	41	51	61	71	81	91
2	12	22	32	42	52	62	72	82	92
3	1	23	33	43	53	63	73	83	93
4	14	24	34	44	54	64	74	84	94
5	15	25	35	45	55	65	75	85	95
6	16	26	36	46	56	66	76	86	96
7	17	27	37	47	57	67	77	87	97
8	18	28	38	48	58	68	78	88	98
9	19	29	39	49	59	69	79	89	99
10	20	30	40	50	60	70	80	90	100

The numbers placed in filled strips are:

1, 3, 5, 7, 11, ..., 99.

The numbers placed in blank strips are:

2, 4, 6, 8, 10, 12, ..., 100.

Let us consider both these types of numbers, separately.

Each number in filled strip, has 0, 2, 4, 6, or 8 at units place. All these numbers are even numbers. If we divide any number in filled strip by 2, then we get 0 as remainder. So, even numbers are exactly divisible by 2.

Each number in blank strip, has 1, 3, 5, 7, or 9 at units place. All these numbers are odd numbers. If we divide odd numbers by 2, then we do not get 0 as remainder. So, odd numbers are not exactly divisible by 2.

ACTIVITY

Tick (√) the even numbers and cross(x) the odd numbers in the following

32 43 56 68 85 21 74 97 90

Example

Write down even and odd numbers from 8 to 18

Solution: Numbers from 8 to 18 are:

8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18.

The numbers 8, 10, 12, 14, 16 and 18 are even numbers, because they are exactly divisible by 2 and in all these numbers the digits at units place is 0, 2, 4, 6 or 8.

Again the numbers 9, 11, 13, 15 and 17 are odd numbers, because they are not exactly divisible by 2 and in all these numbers the digits at units place is 1, 3, 5, 7 or 9.

Exercise 1.3

Q.**1.** Is 100 an odd number? Tell without actual division.

Ans: No.

Q.**2.** Without actual division tell is 55 an odd number?

Ans: Yes.

Q.**3.** Write down even numbers from 12 to 29.

Ans: 12 , 14 , 16 , 18 , 20 , 22 , 24 , 25 , 28.

Q.**4.** Write down odd numbers from 50 to 65.

Ans: 51, 53, 55, 57, 59, 61, 63, 65.

Q.**5.** Write down the first six even numbers.

Ans: 2, 4, 6, 8, 10, 12.

Q.**6.** After 20, write down first three odd numbers.

Ans: 21, 23, 25.

Q.**7.** Which is the first even number after 90?

Ans: **92.**

Q.**8.** Separate the odd and even numbers from the following:

22, 38, 44, 88, 52, 71, 77, 56, 33, 99

Solution:

Odd	Even
33	22
71	38
77	44
99	88
	52
	56

Q.**9.** Write (T) for the true and (F) for the false statement.

(a) 23 is an even number. — F

(b) 52 is an odd number. — F

(c) A number exactly divisible by 2 is an odd number. — F

(d) 15 is an odd number. — T

(e) 30 is an even number. — T

1.4 READING AND WRITING ROMAN NUMBERS UPTO 12.

Roman numbers from 1 to 12 are given below:

Natural Numbers	Roman Numbers		Natural Numbers	Roman Numbers	
	Capital	Small		Capital	Small
1	I	i	7	VII	vii
2	II	ii	8	VIII	viii
3	III	iii	9	IX	ix
4	IV	iv	10	X	x
5	V	v	11	XI	xi
6	VI	vi	12	XII	xii

Exercise 1.4

Q:1. Write the missing roman numbers in the clocks:

(a)   ii, iv, vi, viii, x, xii.

(b)   i, iii, v, vii, ix, xi.

(c)   iv, vi, ix, xii.

(d)   iv, vi, ix, xii.

Q:2. Write the following as natural numbers:

(a) III

Solve:
3

(b) IV

Solve:
4

(c) VI

Solve:
6

(d) X

Solve:
10

(e) VIII

Solve:
8

(f) II

Solve:
2

(g) V

Solve:
5

(h) VII

Solve:
7

(i) IX

Solve:
9

(j) XI

Solve:
11

1.5 — Concept of a Dozen

ACTIVITY   Count and write:
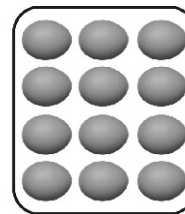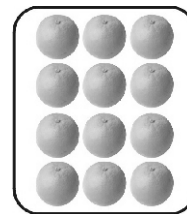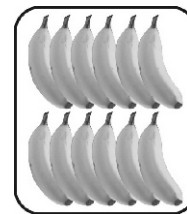
☐ Bananas   ☐ Oranges   ☐ Eggs   ☐ Pencils

Each figure has 12 things:

| |

12 things	= 1 dozen
12 + 12	= 2 dozen
	= 2 dozen
12 + 12 + 12	= 36 things
	= 3 dozens

1 dozen = 12 things
2 dozen = 24 things
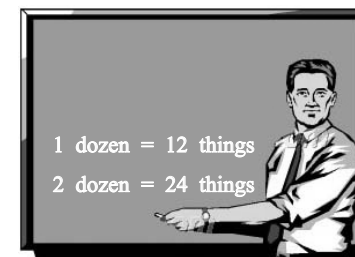
Exercise 1.5

Count and write how many dozens are there?
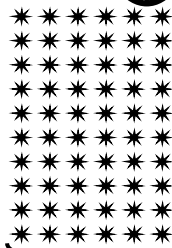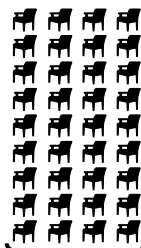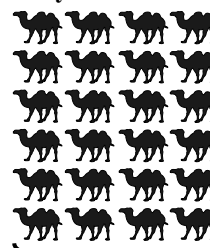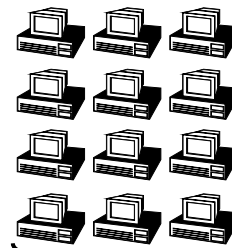
1.6 — **How to write a Common Fraction:**
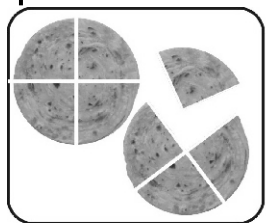
We have learnt about fraction in class II. Let us revise it.

Suppose a chapati is cut into 4 equal pieces. One out of 4 pieces is given to a child. This piece is one-fourth of the chepati and is written as $\frac{1}{4}$. It is read as 1 by 4 or 1 over 4. The remaining three pieces out of 4 are written as $\frac{3}{4}$. It is read as 3 by 4 or 3 over 4 or three forth. Let a piece of sugar-cane is cut into 3 equal parts. Two parts out of 3 are taken. It is two-third part of the sugar-cane. It is written as $\frac{2}{3}$. It is read as 2 by 3 or 2 over 3. The number $\frac{1}{4}$, $\frac{3}{4}$, $\frac{2}{3}$ are called Common Fractions.

In a common fraction $\frac{3}{4}$, 3 is called the numerator and 4 is called the denominator.

Similarly in the fraction $\frac{5}{8}$, the numerator is 5 and denominator is 8.

Denominator ← $\underset{4}{3}$ → Numerator
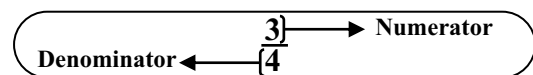
1.7 — **Proper Fraction:**

Look at these figures. They represent fractions. In each fraction the denominator is 4, but the numerators are different. Each of the fractions $\frac{1}{4}$, $\frac{3}{4}$, $\frac{2}{3}$, $\frac{5}{8}$ etc, is a proper fraction.

$\frac{5}{4}$ $\frac{4}{4}$ $\frac{3}{4}$ $\frac{1}{4}$
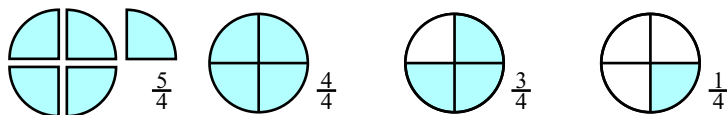
Exercise 1.6

Q: 1. Write the numerator and denominator in each of the following:

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

Ans: Numerator = 1
      Denominator = 2

(ii) $\frac{3}{4}$

Ans: Numerator = 3
      Denominator = 4

(iii) $\frac{2}{5}$

Ans: Numerator = 2
      Denominator = 5

(iv) $\frac{5}{10}$

Ans: Numerator = 6
      Denominator = 10

(v) $\frac{6}{7}$

Ans: Numerator = 6
      Denominator = 7

(vi) $\frac{8}{9}$

Ans: Numerator = 8
      Denominator = 9

(vii) $\frac{7}{9}$

Ans: Numerator = 7
      Denominator = 9

(viii) $\frac{7}{8}$

Ans: Numerator = 7
      Denominator = 8

(ix) $\frac{1}{3}$

Ans: Numerator = 1
      Denominator = 3

(x) $\frac{3}{7}$

Ans: Numerator = 3
      Denominator =7

(xi) $\frac{8}{9}$

Ans: Numerator = 8
      Denominator = 9

(xii) $\frac{4}{6}$

Ans: Numerator = 4
      Denominator = 6

2. Write each of the following in fraction form when:

i. Numerator is 4 and denominator is 5.

Solution.

$$\frac{4}{5}$$

ii. Numerator is 5 and denominator is 6.

Solution.

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

iii. Numerator is 4 and denominator is 7.

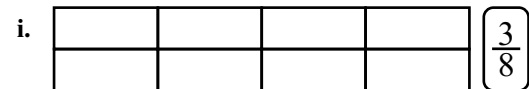**Solution.**

$$\frac{4}{7}$$

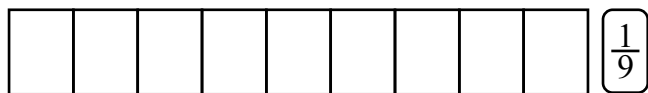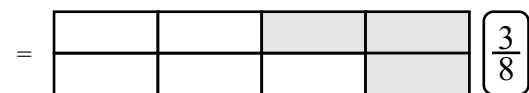**iv.** Numerator is 6 and denominator is 8.

Solution.

v. Numerator is 7 and denominator is 9.

Solution.

$$\frac{7}{9}$$

3. **Colour the required portion in each of the following:**

i.

$$\frac{3}{8}$$

Solution.

$$= \quad \frac{3}{8}$$

$$\frac{1}{9}$$

Solution.

$$= \quad \frac{1}{9}$$
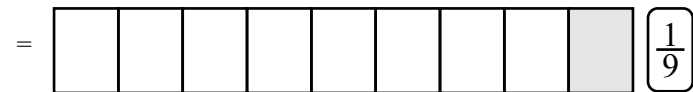
4. Look at the following pictures. What fraction does the coloured portion represent in each picture.

(i)
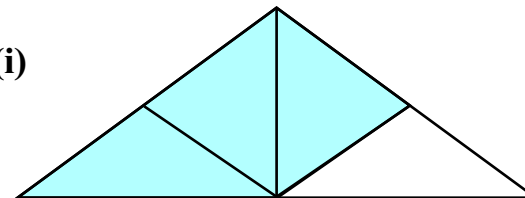
Solution.

$$= \frac{3}{4} \ , \quad \frac{1}{4}$$

(ii)
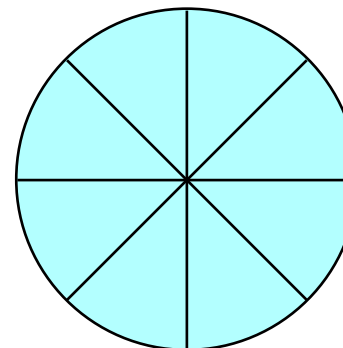
Solution.

$$= \frac{5}{8} \ , \quad \frac{3}{8}$$

(iii)
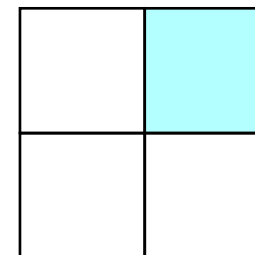
Solution.

$$= \frac{1}{4} \ , \quad \frac{3}{4}$$

(iv)
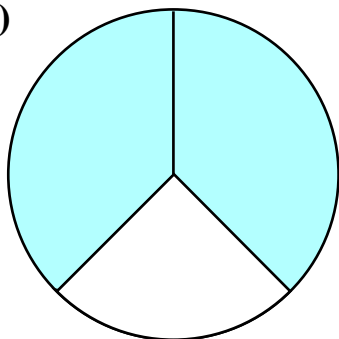
Solution.

$$= \frac{2}{3} \ , \quad \frac{1}{3}$$

(v)
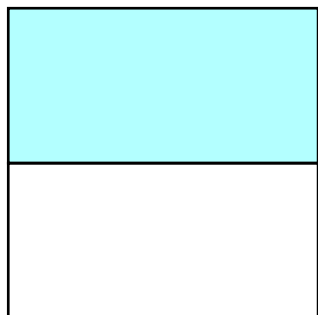
Solution.

$$= \frac{1}{2} \ , \quad \frac{1}{2}$$
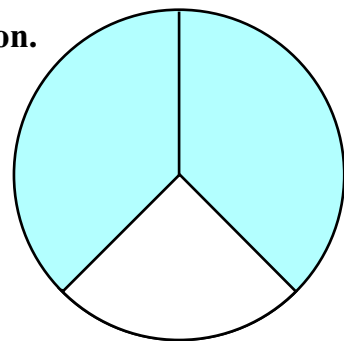
(vi)
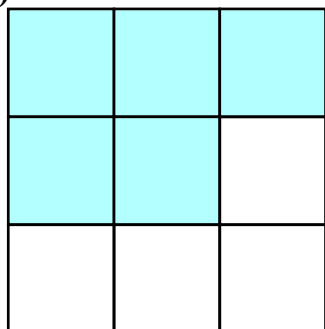
Solution.

$$= \frac{5}{9} \ , \quad \frac{4}{9}$$

Also write what fraction does the white portion represent in each picture.

5. Encircle the proper fractions in the following:
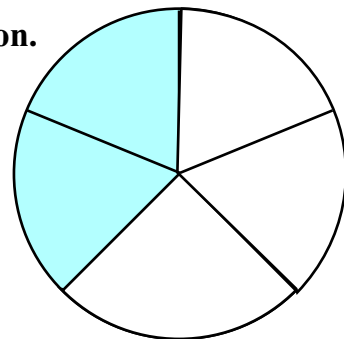
(i) $\frac{2}{3}$

Solution.

$$= \frac{2}{3} \quad \text{Answer}$$
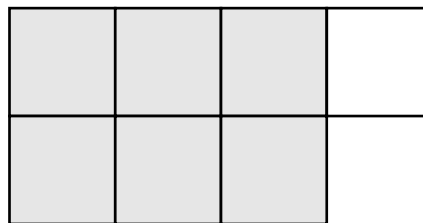
(ii) $\frac{2}{5}$

Solution.

$$= \frac{2}{3} \quad \text{Answer}$$

(iii) $\frac{7}{6}$

Solution.

$$= \frac{7}{6} \quad \text{Answer}$$

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

Solution.
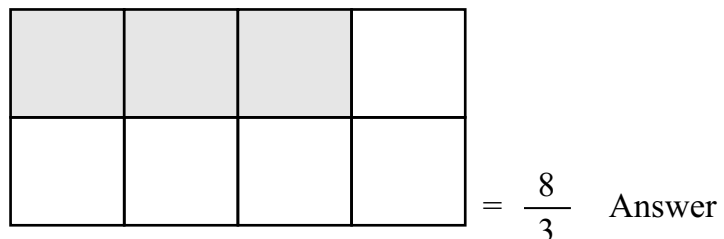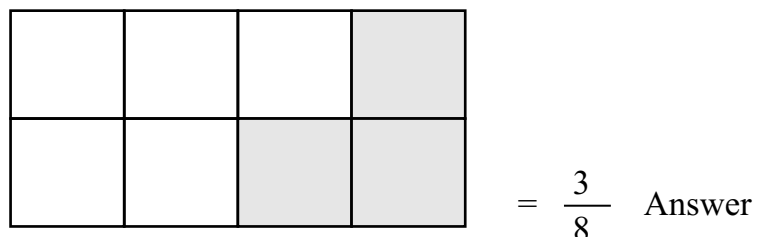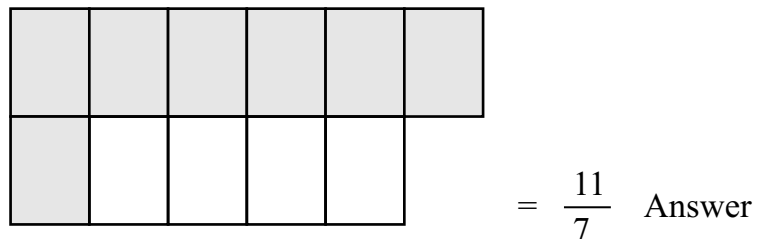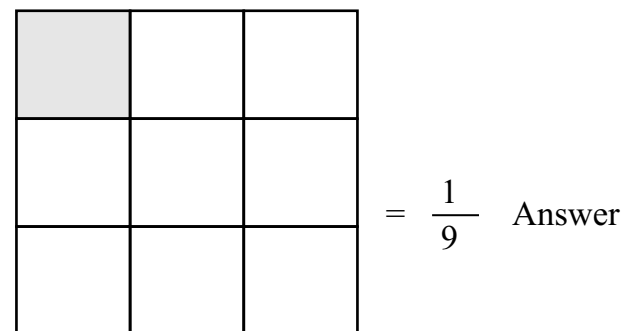
$= \frac{8}{3}$ Answer

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

Solution.

$= \frac{3}{8}$ Answer

(vi) $\frac{11}{7}$

Solution.

$= \frac{11}{7}$ Answer

(vi) $\frac{1}{9}$

Solution.

$= \frac{1}{9}$ Answer

(vii) $\frac{3}{7}$

Solution.

$= \frac{1}{9}$ Answer

(viii) $\frac{4}{8}$

Solution.

$= \frac{4}{8}$ Answer

(ix) $\frac{2}{3}$

Solution.

$= \frac{2}{3}$ Answer

(x) $\frac{15}{7}$

Solution.

$= \frac{15}{7}$ Answer

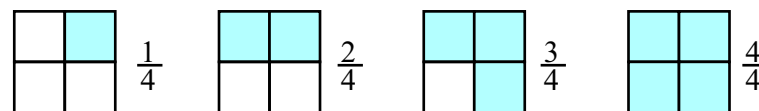**(xi)** $\frac{8}{9}$

Solution.

$= \frac{8}{9}$ Answer
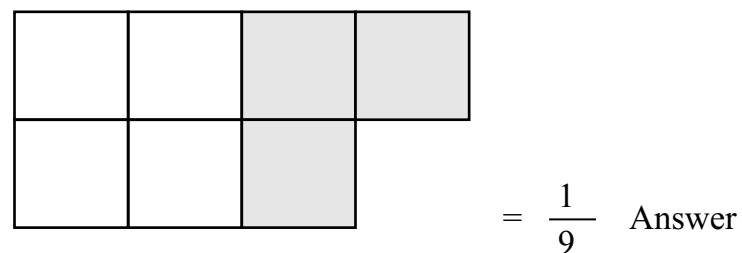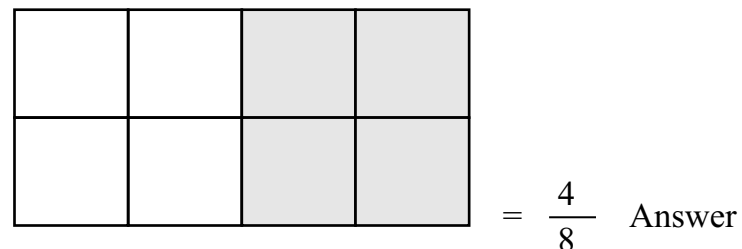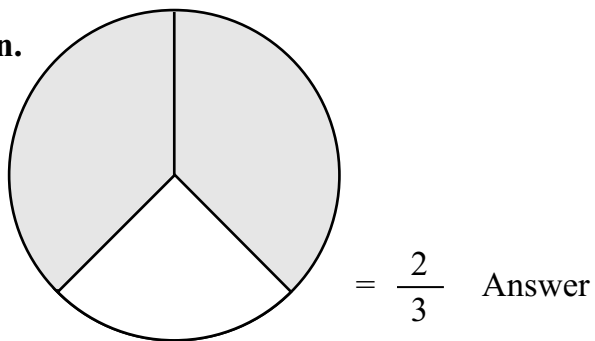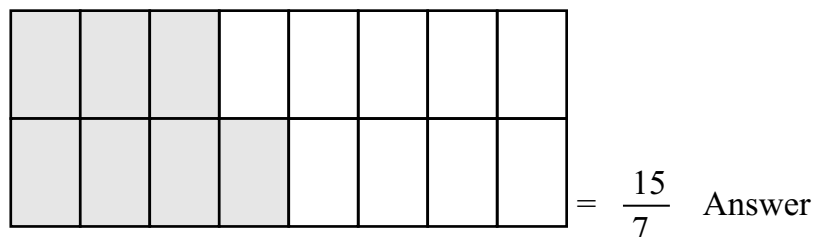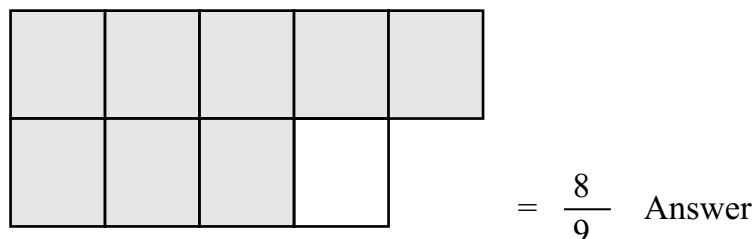
1.8 — **Comparison of Fractions with equal Denominator**

Look at the fractions:

It is observed that all the fractions have equal denominaotrs but different numerators. In such fractions the fraction having larger numerator is greater than the other with smaller numerator. In the above fractions, $\frac{3}{4}$ is greater than $\frac{1}{4}$ or $\frac{1}{4}$ is smaller than $\frac{3}{4}$. Similarly in hte fraction $\frac{3}{8}$ and $\frac{5}{8}$. $\frac{5}{8}$ is greater than $\frac{3}{8}$ or $\frac{3}{8}$ is smaller than $\frac{5}{8}$.

1.9 — **Comparison of Fractions with equal Numerators:**

Let us consider the following figure 1, 2 and 3.

Fig. (1)   Fig. (2)   Fig. (3)

Coloured portion in Fig.1 represents the fraction $\frac{1}{2}$
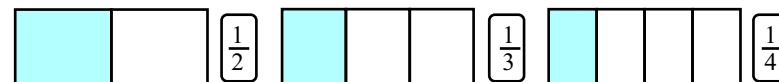
Coloured portion in Fig.2 represents the fraction $\frac{1}{3}$

Coloured portion in Fig.3 represents the fraction $\frac{1}{4}$

Are the numerators of these fractions equal? | Yes |

In the fraction with equal numerator, the fraction having smaller denominator is greater than the other with greater denominator. From the above figures we observe that:

Fraction $\frac{1}{2}$ is greater than $\frac{1}{3}$ and $\frac{1}{3}$ is the greater than ___ .

In other words, fraction $\frac{1}{4}$ is less than $\frac{1}{3}$ and $\frac{1}{3}$ is less than $\frac{1}{2}$.

Therefore, comparison of above fractions can be shown as:

$\frac{1}{3}$ is less than $\frac{1}{2}$ or $\frac{1}{2}$ is greater than $\frac{1}{3}$

$\frac{1}{4}$ is less than $\frac{1}{3}$ or $\frac{1}{3}$ is greater than $\frac{1}{4}$

$\frac{1}{4}$ is less than $\frac{1}{2}$ or $\frac{1}{2}$ is greater than $\frac{1}{4}$

Exercise 1.7

Q.1: Which one is less than the other in each pari of the following:

1. $\frac{7}{6}$ $\frac{3}{6}$

   Solution

   $\frac{3}{6}$ **Ans:**

2. $\frac{3}{5}$ $\frac{2}{5}$

   Solution

   $\frac{2}{5}$ **Ans:**

3. $\frac{2}{3}$ $\frac{1}{3}$

   Solution

   $\frac{1}{3}$ **Ans:**

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

   Solution

   $\frac{7}{9}$ **Ans:**

Q.2: Which one is greater than the other in each pair of the following:

5. $\frac{7}{12}$ $\frac{7}{15}$

   Solution

   $\frac{7}{15}$ **Ans:**

6. $\frac{8}{15}$ $\frac{8}{9}$

   Solution

   $\frac{8}{15}$ **Ans:**

7. $\frac{3}{6}$ $\frac{3}{4}$

   Solution

   $\frac{3}{6}$ **Ans:**

8. $\frac{9}{10}$ $\frac{9}{20}$

   Solution

   $\frac{9}{20}$ **Ans:**

Q.3: Find the greatest and the smallest fractions in each of the following:

1. $\frac{1}{2}$ $\frac{1}{3}$ $\frac{1}{5}$

   Solution

   $\frac{1}{2}$ and $\frac{1}{5}$ **Ans:**

2. $\frac{1}{5}$ $\frac{3}{5}$ $\frac{6}{5}$

   Solution

   $\frac{1}{5}$ and $\frac{6}{5}$ **Ans:**

3. $\frac{5}{9}$ $\frac{6}{9}$ $\frac{4}{9}$

   Solution

   $\frac{5}{9}$ and $\frac{4}{9}$ **Ans:**

4. $\frac{4}{11}$ $\frac{4}{9}$ $\frac{4}{7}$

   Solution

   $\frac{4}{7}$ and $\frac{4}{11}$ **Ans:**

5. $\frac{3}{17}$ $\frac{3}{10}$ $\frac{3}{4}$

   Solution

   $\frac{3}{4}$ and $\frac{3}{17}$ **Ans:**

6. $\frac{21}{10}$ $\frac{11}{10}$ $\frac{4}{10}$

   Solution

   $\frac{21}{10}$ and $\frac{4}{10}$ **Ans:**

Q.4: Arrange the following in ascending order:

1. $\frac{1}{4}$ $\frac{3}{4}$ $\frac{2}{4}$

   Solution

   $\frac{1}{4}$ $\frac{2}{4}$ $\frac{3}{4}$ **Ans:**

2. $\frac{4}{10}$ $\frac{3}{10}$ $\frac{2}{10}$

   Solution

   $\frac{2}{10}$ $\frac{3}{10}$ $\frac{4}{10}$ **Ans:**

3. $\frac{8}{15}$ $\frac{3}{15}$ $\frac{2}{15}$

   Solution

   $\frac{2}{15}$ $\frac{3}{15}$ $\frac{8}{15}$ **Ans:**

4. $\frac{5}{8}$ $\frac{5}{7}$ $\frac{5}{6}$

   Solution

   $\frac{5}{8}$ $\frac{5}{7}$ $\frac{5}{6}$ **Ans:**

5. $\dfrac{7}{10}$ $\dfrac{7}{12}$ $\dfrac{7}{18}$

    Solution

    $\dfrac{7}{18}$ $\dfrac{7}{12}$ $\dfrac{7}{10}$ **Ans:**

6. $\dfrac{2}{5}$ $\dfrac{2}{13}$ $\dfrac{2}{7}$

    Solution

    $\dfrac{2}{13}$ $\dfrac{2}{7}$ $\dfrac{2}{5}$ **Ans:**

1.10 Concept of Decimal Fractions upto 2_____ Decimal Places:

(I) Tenths:

Look at the Fig.1, it has 10 equal parts.

One part of the Fig.1 is shaded. This portion represent the fraction $\dfrac{1}{10}$.

We say that one tenth of the square is shaded.

Now three parts of the Fig.2 are shaded.

This portion represents the fraction $\dfrac{3}{10}$.

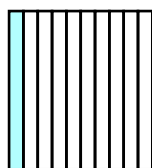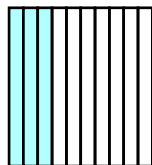Se say that three tenths of this square is shaded.

Fig. (1)

Fig. (2)

There is another way of writing these fractions. Thus, one part out of 10 equal parts or $\dfrac{1}{10}$ is written as: 1. It is read as point one or decimal one. Similarly 3 parts out of 10 equal parts or $\dfrac{3}{10}$ is written as: 3 read as point three or decimal three.

Such fractions are called decimal fractions, The point "." is called decimal point.
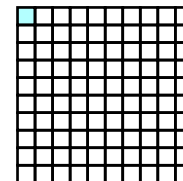
$$\dfrac{3}{10} = \boxed{.3}$$

ACTIVITY   Write decimal fractions for the following:

$\dfrac{3}{10} = .3$, $\dfrac{4}{10} = \underline{\quad}$, $\dfrac{5}{10} = \underline{\quad}$, $\dfrac{6}{10} = \underline{\quad}$, $\dfrac{7}{10} = \underline{\quad}$, $\dfrac{8}{10} = \underline{\quad}$
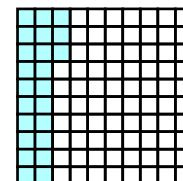
(ii)   **Hundredths:**

In the given figure, there are 100 equal parts. The shaded part is one of the 100 parts. This part represents .

We say one hundredth part of this figure is shaded.

In decimal form the fraction is written as. 01. It is read as **Point Zero One** or **decimal zero one**.

In the same figure, 99 parts out of 100 equal parts are not shaded. The unshaded portion represent the common fraction . In decimal form it is written as: 99 and read as **point nine nine** or **decimal nine nine**.

In the following, 23 parts out of 100 equal parts or part is shaded. The common fraction is written as: 23. It is read as **point two three** or **decimal two three.**

(iii)   **Relation between Tenths and Hundredths:**
        Look at these figures:

Figure. (2)
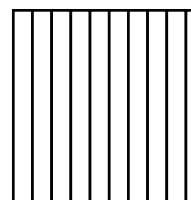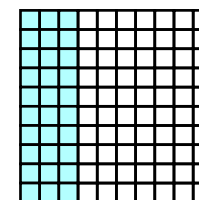
Figure. (1)

3 tenths

30 hundredths

In these two figures, the figure 1 represents the fraction $\frac{3}{10}$ or 0.3 and the figure 2 represents the common fraction $\frac{30}{100}$ or 0.30.

By looking at both the figures, we notice that both figures represent the same coloured portion. So the decimal fraction .3 can also be written as. 30 or .3 = .30.

We can also say that three tenths is same as thirty hundredths. Similarly the decimal fraction 0.5 can also be written as 0.50. or 0.5 = 0.50.

i.e. we can say that five tenths is the same as fifty hundredths.

ACTIVITY Write the following decimal fractions in words:

Common Fractions	Decimal Fractions	Read as
Two hundredths or $\frac{2}{100}$	.02	point zero two
Three hundredths or $\frac{3}{100}$	.03	
Four hundredths or $\frac{4}{100}$	.04	
Nine hundredths or $\frac{9}{100}$	.09	
12 hundredths or $\frac{12}{100}$	.12	
20 hundredths or $\frac{20}{100}$	.20	
50 hundredths or $\frac{50}{100}$	.50	
79 hundredths or $\frac{79}{100}$	.79	
86 hundredths or $\frac{86}{100}$	.86	
98 hundredths or $\frac{98}{100}$	.98	

1.11 **Place value of digits in decimal Fractions**

We are already aware of place values of the digits of a number. Let us consider the digits of number 333.

Hundreds	Tens	Units
3	3	3

The place value of the digit 3 at units place is 3 x 1 = 3
The place value of the digit 3 at tens place is 3 x 10 = 30
The place value of the digit 3 at hundreds place is 3 x 100 = 300

Clearly, when we move from units towards left i.e. Tens and Hundreds, the place value of every digit increases by 10 times.

Similarly, when we move from left to right i.e. from Thousands to Hundreds, Hundreds to Tens, the place value of every digit decreases by $\frac{1}{10}$. This is also true for the fractional part of a decimal fraction.

In other words, we can say that:
It should be noted that the decimal fraction .1, .3, .25 etc have no digit at units place so these decimal fraction are written as 0.1, 0.3, 0.25 etc.

1 hundred $= \frac{1}{10}$ of a thousand
1 ten $= \frac{1}{10}$ of a hundred
1 unit $= \frac{1}{10}$ of a ten
1 tenth $= \frac{1}{10}$ of a unit
1 hundredth $= \frac{1}{10}$ of a tenth

Example-1 What are the place values of the digits in 0.21

Solution:

Units	Decimal point	Tenths	Hundredths
0	.	2	1

In 0.21, digit 2 is at tenths place and its place value is 2 tenths. Now digit 1 is at hundredths place and its place value is 1 hundredths.

Example-2 Find the place values of the digits in 0.56

Solution:

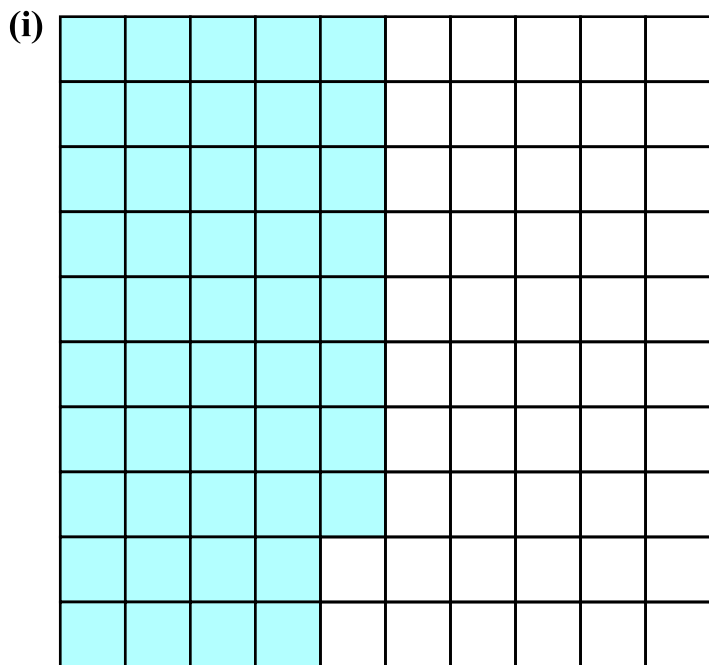| Units	Decimal point	Tenths	Hundredths
0	.	5	6

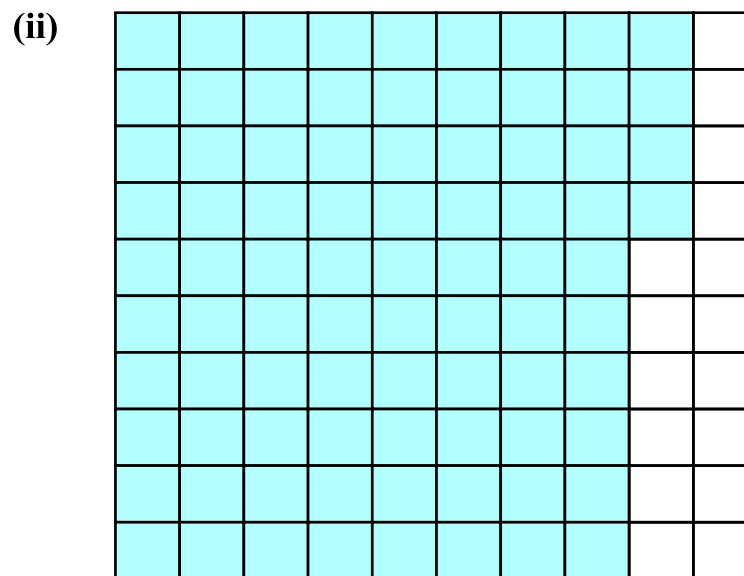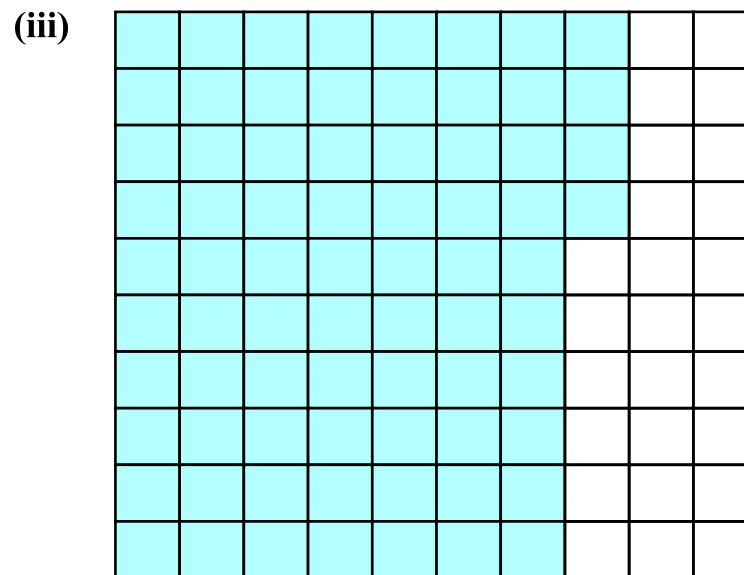5 = 5 Tenths = .5
6 = 6 Hundredths = .06

Exercise 1.8

Q.1. Write the coloured part of following sqares as a common fraction and as a decimal fraction.

(i)

$\dfrac{48}{100} = 0.48$ Answer

(ii)

$\dfrac{84}{100} = 0.84$ Answer

(iii)

$\dfrac{74}{100} = 0.74$ Answer
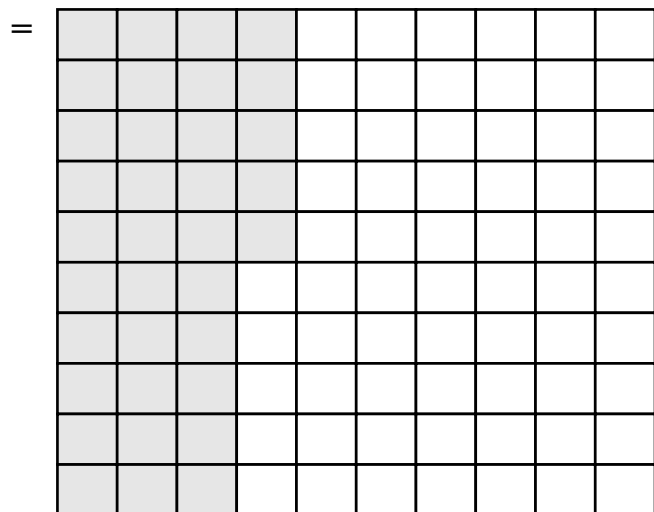
(iv)
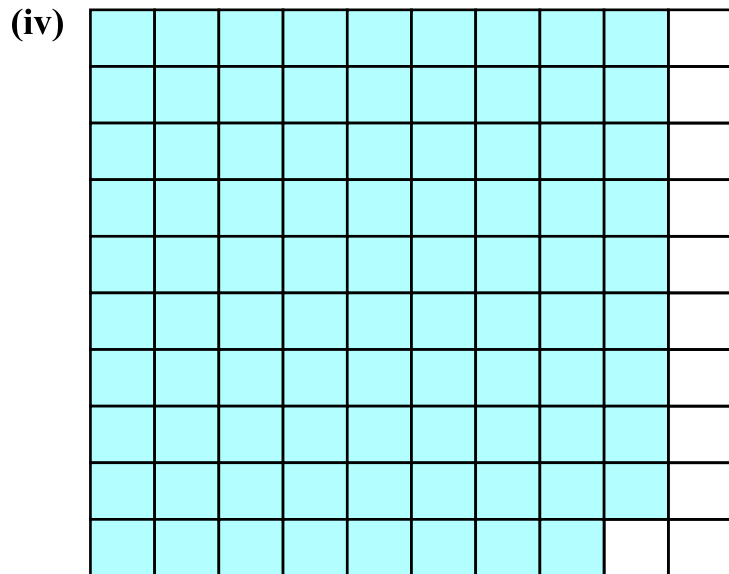
$\dfrac{89}{100} = 0.89$ Answer

Q.2: Colour the following squares to match the decimal fraction.

(i)   0.35

Solution

=

Answer

(ii)   0.05

Solution

=
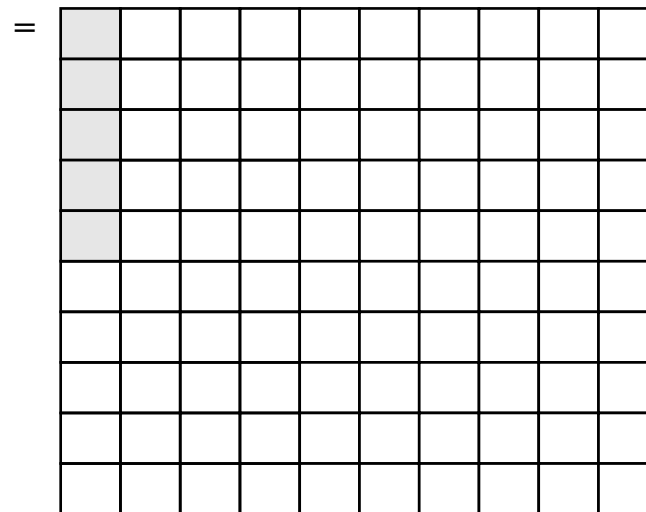
Answer

(iii)   0.54

Solution

=
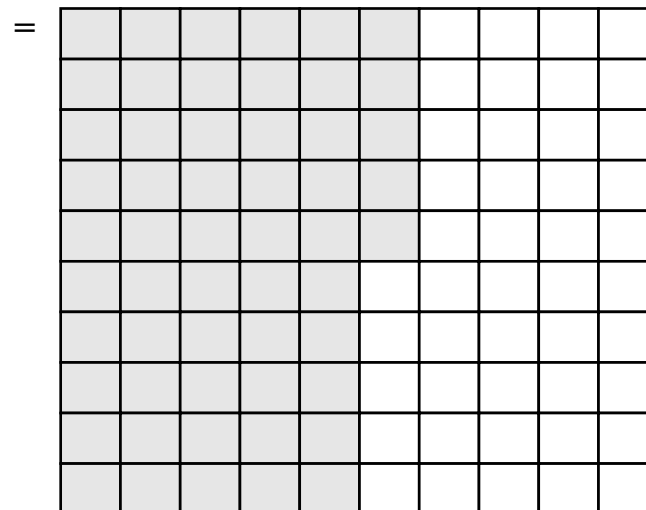
Answer

(iv)   0.75

Solution

=

Answer

(v)   0.18

Solution

=

Answer

(vi)   0.80

Solution

=

Answer
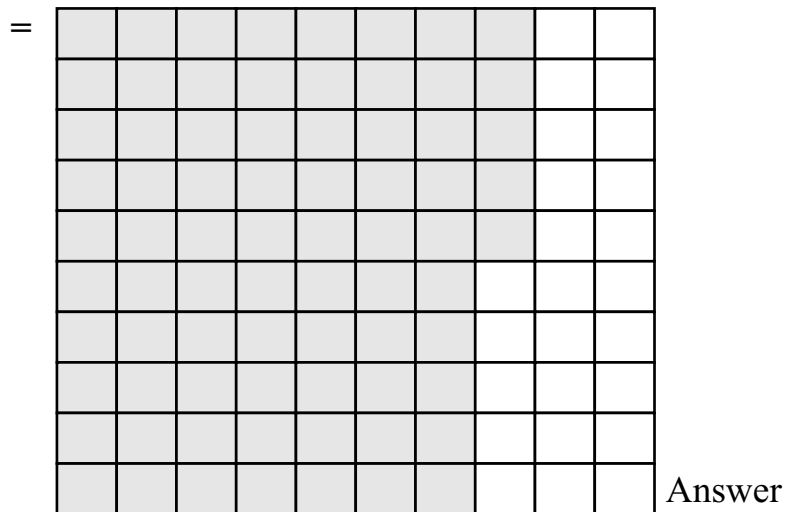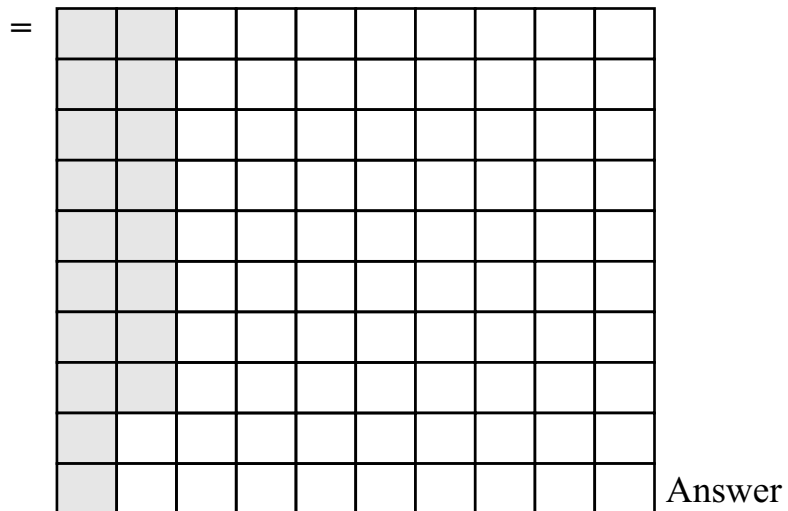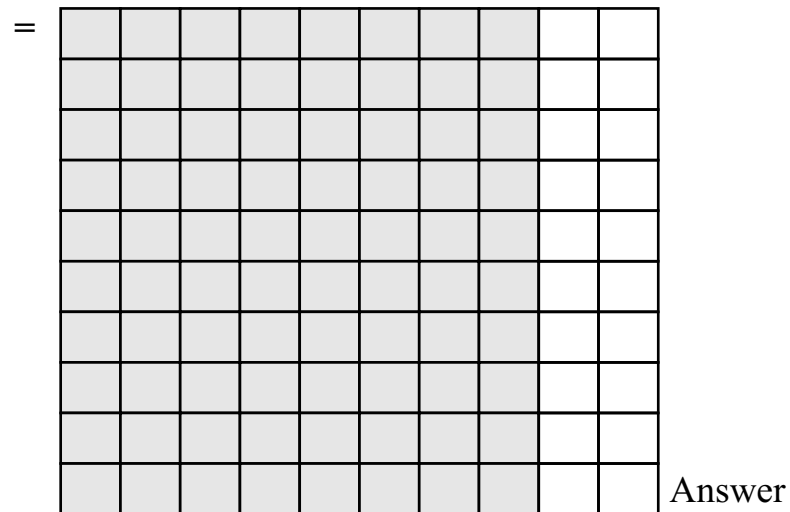
Q.3. Write the place value of the coloured digit in the following:

(i)   .20

Solution

2 tenths = 0.2

Ans:

(ii)   0.0

Solution

0 tenths = 0.0 = 0

Ans:

(iii)   3.36

Solution

3 tenths = 0.3

Ans:

(iv)   0.71

Solution

1 hundredths = 0.01

Ans:

(v)   0.4

Solution

4 thenths = 0.4

Ans:

(vi)   .23

Solution

3 hundredths = 0.03

Ans:

(vii) .04

Solution

0 thenths $= 0.0 = 0$

Ans:

(viii) .99

Solution

9 tenths $= 0.9$

Ans:

Q.4. Write down in decimal fractions:

(i) 8 tenths

Solution

0.8　　Ans:

(ii) 9 tenths

Solution

.9　　Ans:

(iii) 0 units and 2 hundredths

Solution

0.02　Ans:

(iv) 0 units and 3 hundredths

Solution

0.03　Ans:

(v) 1 units and 1 hundredths

Solution

1.01　Ans:

(vi) 1 units nad 7 hundredths

Solution

1.07　Ans:

(vii) 9 units and 9 tenths

Solution

9.9　　Ans:

(viii) 3 tenths and 5 hundredths

Solution

0.35　Ans:

(ix) 2 units nad 5 hundredths

Solution

2.05　Ans:

(x) 2 units 4 tenths and 3 hundredth

Solution

2.43　Ans:

1.12 — **Conversion of common fractions into decimal fractions**

Example-1　Convert $\frac{6}{10}$ into decimal fraction

Solution:　$\frac{6}{10} = 6$ tenths $= 0.6$

Example-2　Convert $\frac{8}{100}$ into decimal fraction

Solution:　$\frac{8}{100} = 8$ hundredths $= 0.08$

ACTIVITY — Make sets of cards showing common and decimal fractions representing the same numbers. Ask children to match them.

Exercise 1.9

Convert the following into decimal fractions:

1. $\frac{4}{10}$

Solution

0.4　　Ans:

2. $\frac{3}{10}$

Solution

0.3　　Ans:

3. $\frac{6}{100}$

Solution

0.06　　Ans:

4. $\frac{8}{100}$

Solution

0.08　　Ans:

5. $\frac{29}{100}$

Solution

0.29　　Ans:

6. $\frac{35}{100}$

Solution

0.35　　Ans:

Fill in the blanks:

7.

$$\frac{1}{2} \quad = \quad \frac{5}{10} \text{ or } \boxed{0.5} \quad = \quad \frac{50}{100} \text{ or } \boxed{0.50}$$

8.

$$\frac{1}{5} \quad = \quad \frac{2}{10} \text{ or } \boxed{0.2} \quad = \quad \frac{20}{100} \text{ or } \boxed{0.20}$$

9.

$$\frac{1}{4} \quad = \quad \frac{25}{100} \quad \text{or} \quad \boxed{0.25}$$

10.

$$\frac{1}{50} \quad = \quad \frac{2}{100} \quad \text{or} \quad \boxed{0.02}$$

11.

$$\frac{1}{25} \quad = \quad \frac{2}{50} \quad = \quad \frac{4}{100} \quad \text{or} \quad \boxed{0.04}$$
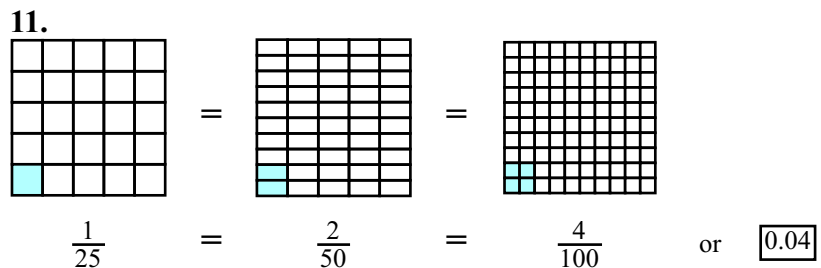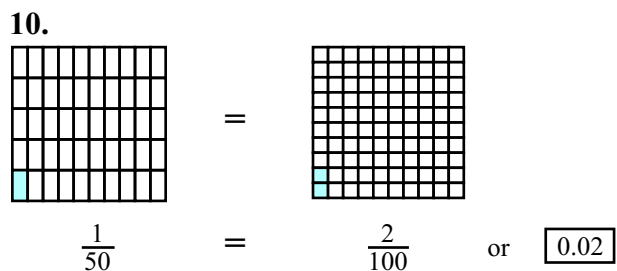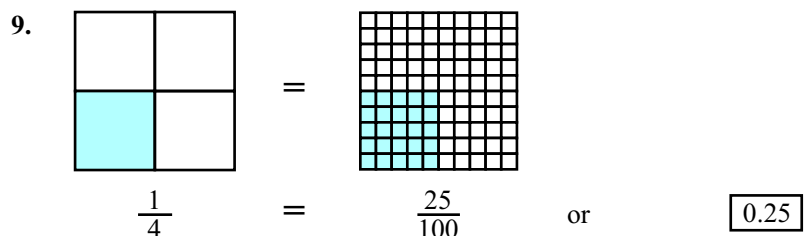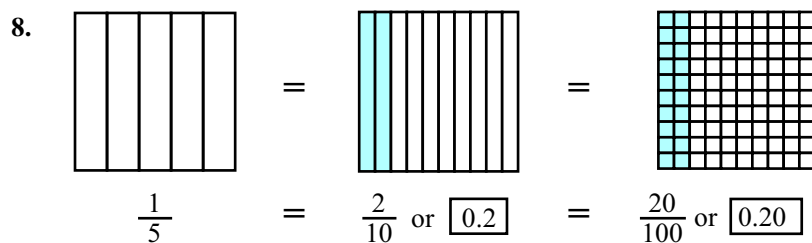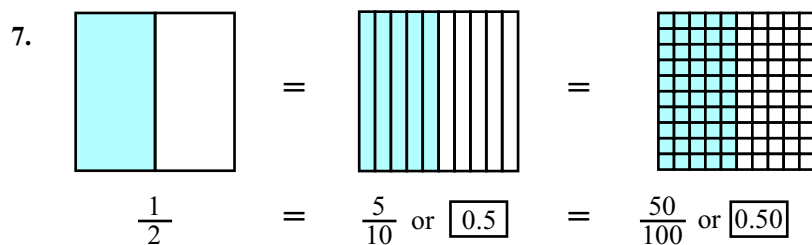
1.13 — **Conversion of Decimal Fraction into Common Fraction** _____

Example   Write 0.8 as common fraction

Solution: $0.8 = 8$ tenths $= \frac{8}{10}$

So, $0.8 = \frac{8}{10}$

Similarly, $0.56 = 56$ hundredths $= \frac{56}{100}$

Exercise 1.10

Write the following as common fractions:

1. 0.18

   Solution

   $\frac{18}{100}$

   Ans:

2. 0.28

   Solution

   $\frac{28}{100}$

   Ans:

3. 0.6

   Solution

   $\frac{6}{100}$

   Ans:

4. 0.31

   Solution

   $\frac{31}{100}$

   Ans:

5. 0.34

   Solution

   $\frac{34}{100}$

   Ans:

6. 0.25

   Solution

   $\frac{25}{100}$

   Ans:

CHAPTER NO.2

ADDITION

2.1 — **Properties of addition:** ——————————

Commutative property of addition when two numerals are added in any order, their sum is always the same.

$$4 + 8 = 12 \quad \text{or} \quad 8 + 4 = 12$$
$$5 + 4 = 9 \quad \text{or} \quad 4 + 5 = 9$$
$$9 + 5 = 14 \quad \text{or} \quad 5 + 9 = 14$$

2.2 — **Associative Property of addition:** ——————

When three numerals are added in any order, their sum is always the same.

$$(1) \quad (2 + 9) + 5 \quad = 11 + 5 = 16$$
$$\text{Or} \quad 2 + (9 + 5) = 2 + 14 = 16$$
$$(2) \quad (7 + 5) + 3 \quad = 12 + 3 = 15$$
$$\text{or} \quad 7 + (5 + 3) = 7 + 8 = 16$$

2.3 — **Additive Identity** ——————————

When we add any number to zero the sum is always same number. Due to this property zero is known as "Additive Identity".

$$6 + 0 = 6 \quad \text{or} \quad 15 + 0 = 15$$
$$9 + 0 = 9 \quad \text{or} \quad 8 + 12 = 12$$

————————— **Exercise 2.1** ————————

A. Verify the following:

1. $3 + 6$ = $\boxed{9}$ or $6 + 3$ $\boxed{9}$

2. $6 + 8$ = $\boxed{14}$ or $8 + 6$ $\boxed{14}$

3. $4 + 9$ = $\boxed{13}$ or $9 + 4$ $\boxed{13}$

4. $8 + 2$ = $\boxed{10}$ or $2 + 8$ $\boxed{10}$

5. $6 + 7$ = $\boxed{13}$ or $7 + 6$ $\boxed{13}$

6. $(2 + 5) + 3$ = $\boxed{10}$ or $2 + (5 + 3)$ $\boxed{10}$

7. $(9 + 3) + 2$ = $\boxed{14}$ or $9 + (3 + 2)$ $\boxed{14}$

8. $(7 + 3) + 6$ = $\boxed{16}$ or $7 + (3 + 6)$ $\boxed{16}$

9. $(1 + 7) + 5$ = $\boxed{13}$ or $1 + (7 + 5)$ $\boxed{13}$

10. $(2 + 6) + 3$ = $\boxed{11}$ or $2 + (6 + 3)$ $\boxed{11}$

11. $7 + 0$ = $\boxed{7}$ or $0 + 7$ $\boxed{7}$

12. $3 + 0$ = $\boxed{3}$ or $0 + 3$ $\boxed{3}$

13. $(5 + 7) + 0$ = $\boxed{12}$ or $5 + (7 + 0)$ $\boxed{12}$

14. $(0 + 5) + 8$ = $\boxed{13}$ or $0 + (5 + 8)$ $\boxed{13}$

15. $(9 + 0) + 5$ = $\boxed{14}$ or $9 + (0 + 5)$ $\boxed{14}$

B. Find the Sum:

1.	1 4 5 + 3 7 1 8 2	**2.**	4 1 5 + 3 5 4 5 0	**3.**	8 7 5 + 6 4 9 3 4			
4.	5 2 7 + 6 5 5 9 2	**5.**	6 3 7 + 8 4 7 2 1	**6.**	4 5 6 + 3 2 6 7 8 2			
7.	8 4 5 + 2 1 4 1 0 5 9	**8.**	3 8 5 + 7 6 1 1 4 8	**9.**	7 3 5 + 4 2 6 1 1 6 1			
10.	1 2 5 + 7 4 5 5 5 1	**11.**	5 6 3 + 3 8 5 1 3 0 8	**12.**	4 7 6 + 4 2 8 6 1			
13.	9 4 5 + 2 6 5 1 2 1 0	**14.**	2 1 5 + 3 3 8 8 5 3	**15.**	3 8 4 + 2 1 5 5 9 9			
16.	4 5 1 + 3 2 7 7 6							

2.4 — **Addition of Numbers**

Represented by 4, 5 or 6 digit Numerals:

In class 2, we have learnt the process of addition numbers represented by 1, 2 or 3 digit numerals. In the same way, we can add numbers represented by 4 or more digit numbers.

The process is explained by the following examples:

Example-1 Find the sum of 5263 and 2165.

Solution:

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

Hence 5261 + 2165 = 7426 Ans.

Add 21563 and 56789

Solution:

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

Hence 21563 + 56783 = 78352 Ans.

Example-3 Add 865790 and 156324

Solution:

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

Hence 865790 + 156324 = 1022114 Ans.

Example-4 Add 4825 and 64769

Solution:

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

Hence 4825 + 64769 = 72294 Ans.

Example-5 Add 87569 and 280059

Solution:

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

Hence 87569 + 280059 = 367628.   Ans.

Exercise 2.2

Add the following numbers:

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

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

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

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

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

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

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

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

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

10.
$$
\begin{array}{r}
9\ 2\ 1\ 5\ 3 \\
+\ 6\ 5\ 4\ 3\ 2 \\
\hline
1\ 5\ 7\ 5\ 8\ 5 \\
\end{array}
$$

11.
$$
\begin{array}{r}
5\ 2\ 4\ 9\ 7\ 5 \\
+\ 3\ 9\ 9\ 8\ 9\ 7 \\
\hline
9\ 2\ 4\ 8\ 1\ 2 \\
\end{array}
$$

12.
$$
\begin{array}{r}
6\ 3\ 2\ 1\ 5\ 2 \\
+\ 6\ 3\ 1\ 5\ 2\ 5 \\
\hline
1\ 2\ 6\ 3\ 6\ 7\ 7 \\
\end{array}
$$

13.
$$
\begin{array}{r}
2\ 1\ 5\ 6\ 4\ 8 \\
+\ 6\ 3\ 2\ 1\ 5\ 7 \\
\hline
8\ 4\ 7\ 8\ 0\ 5 \\
\end{array}
$$

14.
$$
\begin{array}{r}
7\ 5\ 2\ 1\ 6\ 0 \\
+\ 3\ 2\ 1\ 0\ 5\ 4 \\
\hline
1\ 0\ 7\ 3\ 2\ 1\ 4 \\
\end{array}
$$

15.
$$
\begin{array}{r}
4\ 2\ 1\ 6\ 3\ 2 \\
+\ 3\ 2\ 1\ 5\ 7\ 8 \\
\hline
7\ 4\ 3\ 2\ 1\ 0 \\
\end{array}
$$

16.
$$
\begin{array}{r}
4\ 9\ 7\ 3\ 6,3\ 8\ 5\ 1\ 5 \\
+\ 2\ 9\ 8\ 4\ 3 \\
\hline
4\ 9\ 7\ 3\ 6,6\ 8\ 3\ 5\ 8 \\
\end{array}
$$

17.
$$
\begin{array}{r}
8\ 0\ 4\ 3\ 5,2\ 1\ 9\ 6\ 3 \\
+\ 2\ 1\ 5\ 6\ 3 \\
\hline
8\ 0\ 4\ 3\ 5,4\ 3\ 5\ 2\ 6 \\
\end{array}
$$

18.
$$
\begin{array}{r}
3\ 6\ 5\ 4\ 8,9\ 4\ 3\ 2\ 1 \\
+\ 9\ 8\ 4\ 2\ 5 \\
\hline
3\ 6\ 5\ 4\ 9,9\ 2\ 7\ 4\ 6 \\
\end{array}
$$

19. There are 1843 cows and 1614 goats in a farm. Find th total number of animals in the farm?

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

Ans:

20. In a market 29578 eggs arrived on Friday and 34526 eggs on Saturday. What is the total number of eggs arrived in market on these two days?

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

Ans:

21. Afaque has 432567 rupees and sami has 358421 rupees how many rupees both have?

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

Ans:

22. Saba purchased a dressing table for Rs.6750 and a dinning table for Rs.8430 find the total amount?

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

Ans:

CHAPTER NO.3

SUBTRACTION

3.1 — Subtraction

Subtraction of numbers represented by 4, 5 or 6 digit numerals. In class 2, we have learnt the process of subtraction of numbers represented by 1, 2 or 3 digit numerals. In the same way we can subtract numbers represented by 4, 5 or 6 digit numbers. The process is explained by examples given below:

Example-1

Subtract 2647 from 9889

Solution:

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

Hence 9889 - 2647 = 7242 Ans.

Example-2

Find the difference of 7423 and 2798

Solution:

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

Hence the difference of 7423 and 2798 is 4625 Ans.

Example-3

Find the difference of 7236 and 53214
We have to solve 53214 - 7236 therefore

Solution:

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

Hence the difference of 7423and 53214 is 49978 Ans.

Example-4

Solve 832786 - 546987

Solution:

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

Hence 832786 - 546987 = 285799 Ans.

Example-5

There are 4327 cows in a farm 3678 cows were sold. How many were left?

We have to solve 4327 - 3678

Solution:

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

Hence 649 cows were left.

Exercise 3.1

A. Find the difference of:

1.
$$
\begin{array}{r}
7756 \\
-7008 \\
\hline
0748
\end{array}
$$

2.
$$
\begin{array}{r}
6543 \\
-5693 \\
\hline
850
\end{array}
$$

3.
$$
\begin{array}{r}
5701 \\
-2926 \\
\hline
2775
\end{array}
$$

4.
$$
\begin{array}{r}
6721 \\
-5998 \\
\hline
0723
\end{array}
$$

5.
$$
\begin{array}{r}
9000 \\
-3568 \\
\hline
5432
\end{array}
$$

B. Solve the following:

1.
$$
\begin{array}{r}
54213 \\
-8967 \\
\hline
45246
\end{array}
$$

2.
$$
\begin{array}{r}
43001 \\
-35247 \\
\hline
07754
\end{array}
$$

3.
$$
\begin{array}{r}
50005 \\
-43438 \\
\hline
06567
\end{array}
$$

4.
$$
\begin{array}{r}
9221 \\
-87562 \\
\hline
04649
\end{array}
$$

5.
$$
\begin{array}{r}
85321 \\
-72135 \\
\hline
13186
\end{array}
$$

6.
$$
\begin{array}{r}
617430 \\
-735624 \\
\hline
081805
\end{array}
$$

7.
$$
\begin{array}{r}
563098 \\
-651304 \\
\hline
088206
\end{array}
$$

8.
$$
\begin{array}{r}
883218 \\
-900256 \\
\hline
000062
\end{array}
$$

9.
$$
\begin{array}{r}
732159 \\
-845002 \\
\hline
000007
\end{array}
$$

10.
$$
\begin{array}{r}
543216 \\
-701104 \\
\hline
157888
\end{array}
$$

11. A book has 1456 pages. Waqar has read 1198 pages. How many pages are left?

$$
\begin{array}{r}
1456 \\
-1198 \\
\hline
0258
\end{array}
$$

12. By how much 7657 is greater than 6007.

$$
\begin{array}{r}
7657 \\
-6007 \\
\hline
1650
\end{array}
$$

13. In a school there are 2240 student out of them 1225 are boys. Find the number of girls students.

$$
\begin{array}{r}
2240 \\
-1225 \\
\hline
1025
\end{array}
$$

14. The monthly salary of a teacher is 3870. She spent 1550 an books Find the remaining amount with her.

$$
\begin{array}{r}
3870 \\
-1550 \\
\hline
2320
\end{array}
$$

15. A man sold his car for Rs.98614 and purchased an other for Rs.165000. Find the difference in the prices of cars.

$$
\begin{array}{r}
165000 \\
-98614 \\
\hline
66386
\end{array}
$$

16. A factory produces 763215 toys in one week 35789 of the toys are exported and the rest are sold in Pakistan how many toys are sold in Pakistan?

$$
\begin{array}{r}
763215 \\
-35789 \\
\hline
727426
\end{array}
$$

17. By how much 356218 is less than 735286.

$$
\begin{array}{r}
735286 \\
-356218 \\
\hline
379068
\end{array}
$$

18. Mr. Ali Purchased a flat for Rs.970000 he paid Rs.56700 in advance. How much money is yet to be paid?

$$
\begin{array}{r}
970000 \\
-56700 \\
\hline
913300
\end{array}
$$

19. At the beginning of a journey a bus meter showed 18756 kilometers and at the end of the journey it showed 18938 kilometers. How much distance the bus travelled?

$$
\begin{array}{r}
18938 \\
-18756 \\
\hline
00182
\end{array}
$$

20. What should be added to 56379 to get 785217.

$$
\begin{array}{r}
785217 \\
-56379 \\
\hline
728838
\end{array}
$$

CHAPTER NO.4

MULTIPLICATION

4.1 — **Multiplication**

Multiplication table of 2.3.4........, 10 have ben introduced in class two.
We are again going to introduce tables and multiplication chart.

Table of 2

We read like this	We write
Two ones are two.	2 x 1 = 2
Two twos are four.	2 x 2 = 4
Two threes are six.	2 x 3 = 6
Two fours are eight.	2 x 4 = 8
Two fives are ten.	2 x 5 = 10
Two sixes are twelve.	2 x 6 = 12
Two sevens are fourteen.	2 x 7 = 14
Two eights are sixteen.	2 x 8 = 16
Two nines are eighteen.	2 x 9 = 18
Two tens are twenty.	2 x 10 = 20

Table of 3

We read like this	We write
Three ones are three.	3 x 1 = 3
Three twos are six.	3 x 2 = 6
Three threes are nine.	3 x 3 = 9
Three fours are twelve.	3 x 4 = 12
Three fives are fifteen.	3 x 5 = 15
Three sixes are eighteen.	3 x 6 = 18
Three sevens are twenty one.	3 x 7 = 21
Three eights are twenty four.	3 x 8 = 24
Three nines are twenty seven	3 x 9 = 27
Three tens are thirty.	3 x 10 = 30

Tables

Table of 3	Table of 4	Table of 5	Table of 6
3 x 1 = 3	4 x 1 = 4	5 x 1 = 5	6 x 1 = 6
3 x 2 = 6	4 x 2 = 8	5 x 2 = 10	6 x 2 = 12
3 x 3 = 9	4 x 3 = 12	5 x 3 = 15	6 x 3 = 18
3 x 4 = 12	4 x 4 = 16	5 x 4 = 20	6 x 4 = 24
3 x 5 = 15	4 x 5 = 20	5 x 5 = 25	6 x 5 = 30
3 x 6 = 18	4 x 6 = 24	5 x 6 = 30	6 x 6 = 36
3 x 7 = 21	4 x 7 = 28	5 x 7 = 35	6 x 7 = 42
3 x 8 = 24	4 x 8 = 32	5 x 8 = 40	6 x 8 = 48
3 x 9 = 27	4 x 9 = 36	5 x 9 = 45	6 x 9 = 54
3 x 10 = 30	4 x 10 = 40	5 x 10 = 50	6 x 10 = 60

Table of 3	Table of 4	Table of 5	Table of 6
7 x 1 = 7	8 x 1 = 8	9 x 1 = 9	10 x 1 = 10
7 x 2 = 14	8 x 2 = 16	9 x 2 = 18	10 x 2 = 20
7 x 3 = 21	8 x 3 = 24	9 x 3 = 27	10 x 3 = 30
7 x 4 = 28	8 x 4 = 32	9 x 4 = 36	10 x 4 = 40
7 x 5 = 35	8 x 5 = 40	9 x 5 = 45	10 x 5 = 50
7 x 6 = 42	8 x 6 = 48	9 x 6 = 54	10 x 6 = 60
7 x 7 = 49	8 x 7 = 56	9 x 7 = 63	10 x 7 = 70
7 x 8 = 56	8 x 8 = 64	9 x 8 = 72	10 x 8 = 80
7 x 9 = 63	8 x 9 = 72	9 x 9 = 81	10 x 9 = 90
7 x 10 = 70	8 x 10 = 80	9 x 10 = 90	10 x 10 = 100

Multiplication
Tables from 1 to 10

x	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30
4	4	8	12	16	20	24	28	32	36	40
5	5	10	15	20	25	30	35	40	45	50
6	6	12	18	24	30	36	42	48	54	60
7	7	14	21	28	35	42	49	56	63	70
8	8	16	24	32	40	48	56	64	72	80
9	9	18	27	36	45	54	63	72	81	90
10	10	20	30	40	50	60	70	80	90	100

4.2 — Properties of Multiplication

(1) **Cemmutalive Property:**

When two numbers are multiplied in any order, their product is always same.

> $3 \times 6 = 18$ or $6 \times 3 = 18$
> So 3×6 is the same as 6×3

(2) **Associative Property:**

When three numbers are multiplied in any order, their product is always the same.

> $(3 \times 4) \times 5$ or $3 \times (4 \times 5)$
> $= 12 \times 5$ $= 3 \times 20$
> $= 60$ $= 60$

(3) **Multiplicative Identity:**

When any number is multiplied by 1, the product is always that numbers. It is known as multiplicative identity.

> Any number $\times 1$ = that number
> $15 \times 1 = 15$, $62 \times 1 = 62$
> $325 \times 1 = 325$, $8672 \times 1 = 8672$

(4) **Multiplication by 0:**

When any number is multiplied by 0, the product is always (zero) 0.

> Any number $\times 0 = 0$
> $2 \times 0 = 0$ or $0 \times 2 = 0$
> $45 \times 0 = 0$ or $0 \times 45 = 0$
> $732 \times 0 = 0$ or $0 \times 732 = 0$

Exercise 4.1

A. Solve (orally)

(i) 4 x 3 = __12__   (vi)   6 x 9 = __54__

(ii) 9 x 2 = __18__   (vii) 4 x 6 = __24__

(iii) 2 x 10 = __20__   (viii) 9 x 7 = __63__

(iv) 6 x 5 = __30__   (ix) 8 x 4 = __32__

(V) 6 x 7 = __36__   (x)   5 x 7 = __35__

B. Verify that (Commutative property)

(i)   2 x 6 = | 12 | or 6 x 2   = | 12 |

(ii) 7 x 5 = | 35 | or 5 x 7   = | 35 |

(iii) 9 x 8 = | 72 | or 8 x 9   = | 72 |

(iv) 10 x 4 = | 40 | or 4 x 10 = | 40 |

(v)   9 x 3 = | 27 | or 3 x 9   = | 27 |

(vi) 6 x 5 = | 30 | or 5 x 6   = | 30 |

(vii) 8 x 3 = | 24 | or 3 x 8   = | 24 |

(viii) 5 x 2 = | 10 | or 2 x 5   = | 10 |

(ix) 5 x 8 = | 40 | or 8 x 5   = | 40 |

(x)   4 x 7 = | 28 | or 7 x 4   = | 28 |

C. Multiply:

(i)
$$\begin{array}{r} 3\ 4 \\ \times\ 2 \\ \hline 6\ 8 \end{array}$$

(ii)
$$\begin{array}{r} 6\ 3 \\ \times\ 4 \\ \hline 252 \end{array}$$

(iii)
$$\begin{array}{r} 7\ 0 \\ \times\ 9 \\ \hline 630 \end{array}$$

(Iv)
$$\begin{array}{r} 4\ 0 \\ \times\ 9 \\ \hline 360 \end{array}$$

(v)
$$\begin{array}{r} 3\ 6 \\ \times\ 5 \\ \hline 180 \end{array}$$

(vi)
$$\begin{array}{r} 1\ 5 \\ \times\ 6 \\ \hline 9\ 0 \end{array}$$

(vii)
$$\begin{array}{r} 3\ 8 \\ \times\ 7 \\ \hline 266 \end{array}$$

(viii)
$$\begin{array}{r} 8\ 4 \\ \times\ 5 \\ \hline 164 \end{array}$$

(ix)
$$\begin{array}{r} 8\ 2 \\ \times\ 2 \\ \hline 168 \end{array}$$

(x)
$$\begin{array}{r} 4\ 1 \\ \times\ 3 \\ \hline 123 \end{array}$$

Multiplication of a 3 - digit number by 1 digit number.
Consider the following example:

Example-1   Solve 463 x 2

Solution:

$$\begin{array}{r} 4\ 6\ 3 \\ \times\ 2 \\ \hline \mathbf{9}\ 2\ 6 \end{array}$$ Ans.

Example-2   Solve 182 x 6

Solution:

```
    1  8  2
    x     6
 ─────────────
 1  0  9  2      Ans.
```

Example-3   Multiply 546 by 56

Solution:

```
    5  4  6
    x     5
 ─────────────
 2  7  3  0      Ans.
```

Thus 546 x 5 = 2730

Exercise 4.2

A.Multiply:

(1)   809 by 5

```
  809
  x 5
 ──────
 4045
```

(2)   492 by 7

```
  492
  x 7
 ──────
 3444
```

(3)   637 by 4

```
  637
  x 4
 ──────
 2848
```

(4)   459 by 3

```
  459
  x 3
 ──────
 1377
```

(5)   324 by 8

```
  324
  x 8
 ──────
 2592
```

(6)   745 by 9

```
  745
  x 9
 ──────
 6705
```

(7)   485 by 7

```
  485
  x 7
 ──────
 3396
```

(8)   763 by 8

```
  763
  x 8
 ──────
 6104
```

(9)   125 by 3

```
  125
  x 3
 ──────
  375
```

(10)   382 by 6

```
  382
  x 6
 ──────
 2292
```

B.   Solve:

(1) 105 x 6   **630**

(2) 306 x 9   **2754**

(3) 745 x 8   **5960**

(4) 384 x 5   **1920**

(5) 432 x 7   **3024**

(6) 983 x 5   **4915**

(7) 841 x 2   **1684**

(8) 355 x 5   **1775**

(9) 743 x 9   **6687**

(10) 453 x 3   **1359**

C. Word Problem:

1. Ahmed buys a bat for Rs.135/-. How much he will pay for 7 bats?

$$\begin{array}{r} 1\ 3\ 5 \\ \times\ 7 \\ \hline 9\ 4\ 5 \end{array}$$ Ans:

2. One bicycle costs Rs.885/-. What is price of 9 bicycles?

$$\begin{array}{r} 8\ 8\ 5 \\ \times\ 9 \\ \hline 7\ 9\ 6\ 5 \end{array}$$ Ans:

3. Alina bought a bag for Rs. 432. How much she paid for 5 bags?

$$\begin{array}{r} 4\ 3\ 2 \\ \times\ 5 \\ \hline 2\ 1\ 6\ 0 \end{array}$$ Ans:

4. Afaque made 175 runs in an inning. How many runs will he made in 6 innings?

$$\begin{array}{r} 1\ 7\ 5 \\ \times\ 6 \\ \hline 1\ 0\ 5\ 0 \end{array}$$ Ans:

5. What is the multiplication of 366 x 8?

$$\begin{array}{r} 3\ 6\ 6 \\ \times\ 8 \\ \hline 2\ 9\ 2\ 8 \end{array}$$ Ans:

Multiplication of 2 - and 3 - digit numbers by Tens.
Consider the following Examples:

Example-1   Solve 38 x 10

Solution:

$$\begin{array}{r} 3\ 8 \\ \times\ 1\ 0 \\ \hline 0\ 0 \\ 3\ 8\ \times \\ \hline 3\ 8\ 0 \end{array}$$

Thus 38 x 10 = 380

Example-2   Solve 546 x 10

Solution:

$$\begin{array}{r} 5\ 4\ 6 \\ \times\ 1\ 0 \\ \hline 0\ 0\ 0 \\ 5\ 4\ 6\ \times \\ \hline 5\ 4\ 6\ 0 \end{array}$$

Thus 546 x 10 = 5460

Example-3   Solve 236 x 40

Solution:

$$\begin{array}{r} 2\ 3\ 6 \\ \times\ 4\ 0 \\ \hline 0\ 0\ 0 \\ 9\ 4\ 4\ \times \\ \hline 9\ 4\ 4\ 0 \end{array}$$

Thus 236 x 40 = 9440

Exercise 4.3

A. Solve:

(1) 34 x 10

Solution:
```
      3 4
   x  1 0
   ───────
      0 0
    3 4 x
   ───────
    3 4 0    Ans:
```

(2) 35 x 40

Solution:
```
      3 5
   x  4 0
   ───────
      0 0
    1 4 0 x
   ───────
    1 4 0 0    Ans:
```

(3) 84 x 20

Solution:
```
       8 4
    x  2 0
   ───────
       0 0
    1 6 8 x
   ───────
    1 6 8 0    Ans:
```

(4) 63 x 50

Solution:
```
       6 3
    x  5 0
   ───────
       0 0
    3 1 5 x
   ───────
    3 1 5 0    Ans:
```

(5) 73 x 60

Solution:
```
       7 3
    x  6 0
   ───────
       0 0
    4 3 5 x
   ───────
    4 3 8 0    Ans:
```

(6) 358 x 10

Solution:
```
       3 5 8
    x   1 0
   ───────
       0 0 0
    3 5 8 0 x
   ───────
    3 5 8 0 0    Ans:
```

(7) 945 x 20

Solution:
```
       9 4 5
    x   2 0
   ───────
       0 0 0
    1 8 9 0 x
   ───────
    1 8 9 0 0    Ans:
```

(8) 435 x 30

Solution:
```
       4 3 5
    x   3 0
   ───────
       0 0 0
    1 3 0 5 x
   ───────
    1 3 0 5 0    Ans:
```

(9) 73 x 60

Solution:
```
       7 3
    x  6 0
   ───────
       0 0
    4 3 8 x
   ───────
    4 3 8 0    Ans:
```

(10) 821 x 50

Solution:
```
       8 2 1
    x   5 0
   ───────
       0 0 0
    4 1 0 5 x
   ───────
    4 1 0 5 0    Ans:
```

B. Multiply the following:

(1) 563 x 40

Solution:
```
       5 6 3
    x   4 0
   ───────
       0 0 0
    2 2 4 2 x
   ───────
    2 2 4 2 0    Ans:
```

(2) 740 x 10

Solution:
```
       7 4 0
    x   1 0
   ───────
       0 0 0
     7 4 0 x
   ───────
     7 4 0 0    Ans:
```

(3) 845 x 20

Solution:
```
       8 4 5
    x   2 0
   ───────
       0 0 0
    1 6 9 0 x
   ───────
    1 6 9 0 0    Ans:
```

(4) 746 x 30

Solution:
```
       7 4 4
    x   3 0
   ───────
       0 0 0
    2 2 3 8 x
   ───────
    2 2 3 8 0    Ans:
```

(5) 845 x 50

Solution:
```
    8 4 5
  x   5 0
  ─────────
    0 0 0
  4 2 2 5 x
  ─────────
  4 2 2 5 0   Ans:
```

(6) 358 x 10

Solution:
```
    3 5 8
  x   1 0
  ─────────
    0 0 0
  3 5 8 x
  ─────────
  3 5 8 0   Ans:
```

(7) 945 x 20

Solution:
```
    9 4 5
  x   2 0
  ─────────
    0 0 0
  1 8 9 0 x
  ─────────
  1 8 9 0 0   Ans:
```

(8) 835 x 30

Solution:
```
    8 3 5
  x   3 0
  ─────────
    0 0 0
  2 5 0 5 x
  ─────────
  2 5 0 5 0   Ans:
```

(9) 563 x 70

Solution:
```
    8 4 5
  x   7 0
  ─────────
    0 0 0
  3 7 6 1 x
  ─────────
  3 7 6 1 0   Ans:
```

(10) 821 x 50

Solution:
```
    8 2 1
  x   5 0
  ─────────
    0 0 0
  4 1 0 5 x
  ─────────
  4 1 0 5 0   Ans:
```

C. Multiply the following:

1. One black board costs Rs. 288/- what is price for 10 blackboard?
```
    2 8 8
  x   1 0
  ─────────
    0 0 0
  2 8 8 x
  ─────────
  2 8 8 0   Ans:
```

2. One desk costs Rs. 288/-. What is price for 20 desks?
```
    2 8 8
  x   2 0
  ─────────
    0 0 0
  5 7 6 x
  ─────────
  5 7 6 0   Ans:
```

3. Anwar bought a book for 135 rupees. How much he will pay for 30 books?
```
    1 3 5
  x   3 0
  ─────────
    0 0 0
  4 0 5 x
  ─────────
  4 0 5 0   Ans:
```

4. Amna bought a frock for Rs. 165/-. What is price of 30 frocks?
```
    1 6 5
  x   3 0
  ─────────
    0 0 0
  4 9 5 x
  ─────────
  4 9 5 0   Ans:
```

5. What is product of 397 and 50 ?
```
    3 9 7
  x   5 0
  ─────────
    0 0 0
  1 9 8 5 x
  ─────────
  1 9 8 5 0   Ans:
```

Multiplication continued:

In his section we will explain the process of multiplication of numbers represented by 2 or 3 digits numbers by numbers represented by 2 - digit numbers. The process is explained in the following examples:

Example-1   Solve 47 x 18

    Solution:

```
      4  7
  x   1  8
  ---------
  3   7  6
  4   7  x
  ---------
  8   4  6
```

Thus 47 x 18 = 846.

Find the product of 263 and 45

Solution:

```
      2   4   7
  x       4   5
  ----------------
  1   2   3   5
  9   8   8   x
  ----------------
  1  1   1   1   5
```

Thus 263 x 45 = 11835.

Word Problems:

Example-1   There are 75 boys in class (iii) each boy has 8 copies. Find the total number of copies in the class:

Solution:

Number of boys in the Class		7 5
Number of copies with each boy		x 8
Thus total number of copies		6 0 0

Example-2   A bakery makes 167 loaves everyday. How many loaves would it make in 7 days.

Solution:

Number of loaves bakery makes per day		1 6 7
In seven days		x 7
Total No. of loaves bakery makes in 7 days		1 1 6 9

Example-3   There are 40 passengers in a bus. Each pay 5 rupees to the driver. How much money driver got by all passengers.

Solution:

Number of passengers in bus.		4 0
Paid by each passengers.		x 5
Total money		2 0 0

Example-4   The cost of 1 bat is 6. Raza bought 35 bats. How much Raza will pay to the shopkeer.

Solution:

Bought 35 bats.		3 5
Cost of one bat.		x 6
Total money		2 1 0

Exercise 4.4

A. Solve:

(1) 77 x 45

Solution:
```
      7 7
   x  5 4
   ------
    3 8 5
  3 0 8 x
  --------
  3 4 6 5    Ans:
```

(2) 83 x 62

Solution:
```
      8 3
   x  6 2
   ------
    1 6 6
  4 9 8 x
  --------
  5 1 4 6    Ans:
```

(3) 86 x 76

Solution:
```
      8 6
   x  7 6
   ------
    5 1 6
  6 0 2 x
  --------
  6 5 3 6    Ans:
```

(4) 90 x 76

Solution:
```
      9 0
   x  7 6
   ------
    5 4 0
  6 3 0 x
  --------
  6 8 4 0    Ans:
```

(5) 89 x 98

Solution:
```
      8 9
   x  9 8
   ------
    7 1 2
  8 0 1 x
  --------
  8 7 2 2    Ans:
```

(6) 124 x 15

Solution:
```
    1 2 4
   x  1 5
   ------
    6 2 0
  1 2 4 x
  --------
  1 8 6 0    Ans:
```

(7) 150 x 17

Solution:
```
    1 5 0
   x  1 7
   ------
  1 0 5 0
  1 5 0 x
  --------
  2 5 5 0    Ans:
```

(8) 289 x 24

Solution:
```
    2 8 9
   x  2 4
   ------
  1 1 5 6
  5 7 8 x
  --------
  7 0 3 6    Ans:
```

(9) 207 x 26

Solution:
```
    2 0 7
   x  2 6
   ------
  1 2 4 2
  4 1 4 x
  --------
  5 3 8 2    Ans:
```

(10) 276 x 29

Solution:
```
    2 7 6
   x  2 9
   ------
  2 4 8 4
  5 5 2 x
  --------
  8 0 0 4    Ans:
```

B. Find the product of:

(1) 316 and 37

Solution:
```
      1 6
   x  3 7
   ------
  2 2 1 2
  9 4 8 x
  --------
  1 1 6 9 2    Ans:
```

(2) 382 and 45

Solution:
```
    3 8 2
   x  4 5
   ------
  1 9 1 0
  1 5 2 8 x
  --------
  1 7 1 9 0    Ans:
```

(3) 745 and 58

Solution:

```
    7 4 5
  x   5 4
  ---------
  2 9 8 0
  3 7 2 5 x
  ---------
  4 0 2 3 0    Ans:
```

(4) 987 and 98

Solution:

```
    9 8 7
  x   9 8
  ---------
  7 8 9 6
  8 8 8 3 x
  ---------
  9 6 7 2 6    Ans:
```

(5) 960 and 92

Solution:

```
    9 6 0
  x   9 0
  ---------
  1 9 2 0
  6 8 4 0 x
  ---------
  7 0 3 2 0    Ans:
```

(6) 784 and 83

Solution:

```
    7 8 4
  x   8 3
  ---------
  2 3 5 2
  6 2 7 2 x
  ---------
  6 5 0 7 2    Ans:
```

(7) 490 and 76

Solution:

```
    4 9 0
  x   7 6
  ---------
  2 9 4 0
  3 4 3 0 x
  ---------
  3 7 2 4 0    Ans:
```

(8) 677 and 74

Solution:

```
    6 7 7
  x   7 4
  ---------
  2 7 0 8
  4 7 3 9 x
  ---------
  5 0 0 9 8    Ans:
```

(9) 523 and 35

Solution:

```
    5 2 3
  x   3 5
  ---------
  2 6 1 5
  1 5 6 9 x
  ---------
  1 8 2 0 5    Ans:
```

(10) 816 and 44.

Solution:

```
    8 1 6
  x   4 4
  ---------
  3 2 6 4
  3 2 6 4 x
  ---------
  3 5 9 0 4    Ans:
```

C. Word Problems:

1. There are 135 cars and each has 4 wheels. Find the total number of wheels.

```
    1 3 5
  x     4
  ---------
    5 4 0
```

2. There are 150 trucks. Each truck has 8 wheels. How many wheels are in all?

```
    1 5 0
  x     8
  ---------
  1 2 0 0
```

3. There are 35 rows of plants. Each row has 25 plants. What is the total number of plants?

```
    3 5
  x 2 5
  -------
  1 7 5
  7 0 x
  -------
  8 7 5
```

4. In a library there are 54 cupboards. There are 225 books in each cupboard. Find the total number of books in the library.

```
    2 2 5
  x   5 4
  ---------
    9 0 0
  1 3 2 5 x
  ---------
  1 4 1 5 0
```

5. An army division consists of 155 companies in each company there are 65 soldiers. What is the total number of soldiers in the division.

```
    1 5 5
  x   6 5
  ---------
    7 7 5
    9 3 0 x
  ---------
  1 0 0 7 5
```

CHAPTER NO.5

DIVISION

5.1 — Concept of Division

(A) **What numbers are to be put in the empty boxes:**

1. 4 x 4 = 16 **2.** 8 x 7 = 56 **3.** 5 x 6 = 30

4. 6 x 7 = 42 **5.** 9 x 7 = 36 **6.** 10 x 7 = 70

(b) **(1)** How many fours make sixteen?
(2) How many eights make fifty six?
(3) How many fives make thirty?
(4) How many sixes make forty two?
(5) How many nines make thirty six?
(6) How many tens make seventy?

In the notation (÷) there question may be asked as under:

(1) 16 ÷ 4 **(2)** 56 ÷ 8 **(3)** 30 ÷ 5 **(4)** 42 ÷ 6
(5) 36 ÷ 9 **(6)** 70 ÷ 10

It is quite clear that, there three forms of question are identical to one on other. The only difference is that the first form indicates that filling of empty boxes is the inverse operation of multiplication.
In the second form questions have been explained.

Notation of Division:
In the third form, in fact the same question has been put directly in the mathematical notation. In addition to this the notation of division (÷) an other form of notation used.

This also a notation of division.
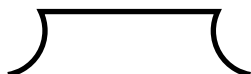
For example 36 ÷ 4 is written in the notation:

as 4) 36

Example-1 Solve 39 ÷ 3

Solution:

$$3 \overline{)\ 3\ 9\ } \ 13$$
$$\underline{-\ 3}$$
$$9$$
$$\underline{9}$$
$$x$$

Example-2 Solve 98 ÷ 2

Solution:

$$2 \overline{)\ 9\ 8\ } \ 49$$
$$\underline{8}$$
$$1\ 8$$
$$\underline{1\ 8}$$
$$x$$

The quotient is 49 and remainder is 0.

Division of a 2 - digit number by 1 - digit number

Example-1 Solve 24 ÷ 4

Solution:

$$4 \overline{)\ 2\ 4\ } \ 6$$
$$\underline{-\ 2\ 4}$$
$$x$$

Thus 24 ÷ 4 = 6.

Example-2

Solve 87 by 4

Solution:

```
4 ) 8 7 ( 21.75
    - 8
    ─────
    0 7
    - 0 4
    ─────
    3 0
    2 8
    ─────
    2 0
    2 0
    ─────
     0
```

Step - 1: 8 tens ÷ 4 = 2 tens
Step - 2: 7 units ÷ 4 = 3 units with reminder
Hence 87 ÷ 2 = 21.75

Example-3

Solve 75 by 3

Solution:

```
3 ) 7 5 ( 25
    6
    ───
    1 5
    1 5
    ───
     0
```

Thus 75 ÷ 3 = 25.

Example-4

Solve 87 ÷ 10

Solution:

```
10 ) 8 7 ( 8
     - 8 0
     ─────
       7
```

Thus 87 ÷ 10 = 8 with remainder 7.
Thus 75 ÷ 3 = 25.

Exercise 5.1

A. Solve:

(1) 45 ÷ 3

Solution

```
3 ) 4 5 ( 15
    3
    ───
    1 5
  - 1 5
    ───
    0 0
```

= 15   Ans:

(2) 72 ÷ 9

Solution

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

= 8   Ans:

(3) 18 ÷ 6

Solution

```
3 ) 1 8 ( 15
    1 8
    ───
    0 0
```

= 3   Ans:

(4) 78 ÷ 2

Solution

```
2 ) 7 8 ( 39
    6
    ───
    1 8
  - 1 8
    ───
    0 0
```

= 39   Ans:

(5) 95 ÷ 5

Solution

```
5 ) 9 5 ( 19
    5
    ───
    4 5
  - 4 5
    ───
    0 0
```

= 19   Ans:

(6) 98 ÷ 7

Solution

```
7 ) 9 8 ( 14
    7
    ───
    2 8
  - 2 8
    ───
    0 0
```

= 14   Ans:

(7) 76 ÷ 4

Solution

```
4 ) 7 6 ( 19
      4
    ─────
      3 6
    - 3 6
    ─────
= 19  Ans:  0 0
```

(8) 91 ÷ 7

Solution

```
7 ) 9 1 ( 13
      7
    ─────
      2 7
    - 2 7
    ─────
= 13  Ans:  0 0
```

(9) 84 ÷ 3

Solution

```
3 ) 8 4 ( 28
      6
    ─────
      2 4
    - 2 4
    ─────
=28  Ans:  0 0
```

(10) 54 ÷ 9

Solution

```
9 ) 5 4 ( 6
      5 4
    ─────
        0 0
= 6  Ans:
```

B. Divide:

(1) 63 by 7

Solution

```
7 ) 6 3 ( 9
      6 3
    ─────
        0 0
= 9  Ans:
```

(2) 55 by 5

Solution

```
5 ) 5 5 ( 11
      5 5
    ─────
        0 0
= 11  Ans:
```

(3) 38 by 2

Solution

```
2 ) 3 8 ( 19
      2
    ─────
      1 8
      1 8
    ─────
= 19  Ans:  0 0
```

(4) 75 by 7

Solution

```
7 ) 7 5 ( 10
      7 5
    ─────
        0 0
= 10  Ans:
```

(5) 60 by 3

Solution

```
3 ) 6 0 ( 20
      6
    ─────
      x 0
        0
    ─────
= 20  Ans:  0
```

(6) 47 by 2

Solution

```
2 ) 4 7 ( 23
      4
    ─────
      x 7
        6
    ─────
= 23- 1  Ans:  1
```

(7) 80 by 8

Solution

```
8 ) 8 0 ( 10
      8 0
    ─────
      0 0
= 10   Ans:
```

(8) 44 by 2

Solution

```
2 ) 4 4 ( 22
      4 4
    ─────
      0 0
= 22  Ans:
```

(9) 27 by 9

Solution

```
9 ) 2 7 ( 3
      2 7
    ─────
      0 0
= 3  Ans:
```

C. Look at the following picture and answer the questions given below:

a. How many boxes of two stars each make 20?

Solution

$$10\overline{)20}\ (2$$
$$\underline{2\ 0}$$
$$0\ 0$$

= 2 Ans:

b. How many boxes of two starts each make 16?

Solution

$$10\overline{)16}\ (1.6$$
$$\underline{1\ 0}$$
$$x\ 6\ 0$$
$$6\ 0$$
$$\underline{0\ 0}$$

= 1.4 Ans:

c. How many boxes of two stars each make 14?

Solution

$$10\overline{)14}\ (1.4$$
$$\underline{1\ 0}$$
$$x\ 4\ 0$$
$$4\ 0$$
$$\underline{0\ 0}$$

= 1.4 Ans:

d. How many boxes of two stars each make 10?

Solution

$$10\overline{)10}\ (1$$
$$\underline{1\ 0}$$
$$0\ 0$$

= 1 Ans:

D. See the following picture and answer the questions given below:

a. How many fours are there in 36?

Solution

$$4\overline{)36}\ (9$$
$$\underline{3\ 6}$$
$$0\ 0$$

d. How many fours are therein 24?

Solution

$$4\overline{)24}\ (6$$
$$\underline{2\ 4}$$
$$0\ 0$$

a. How many fours are there in 20?

Solution

$$4\overline{)20}\ (5$$
$$\underline{2\ 0}$$
$$0\ 0$$

Division of a 3 - digit number by 1 - digit number:

Consider the following examples:

Example-1

Solve 639 ÷ 3

Solution:

$$3\overline{)639}\ (213$$
$$\underline{6}$$
$$3$$
$$\underline{3}$$
$$9$$
$$\underline{9}$$
$$0$$

Thus 639 ÷ 3 = 213.

Example-2

Divide 156 by 4.

Solution:

$$4\overline{)156}\ (213$$
$$\underline{1\ 2}$$
$$3\ 6$$
$$\underline{3\ 6}$$
$$0$$

Thus 156 ÷ 4 = 39.

Example-3

Solve 785 ÷ 5

Solution:

```
5 ) 7 8 5 ( 157
      - 5
      2 8
      - 2 5
        3 5
        - 3 5
          0
```

Thus 785 ÷ 5 = 157.

Example-4

Divide 289 by 3.

Solution:

```
3 ) 2 8 9 ( 96
      - 2 7
        1 9
        - 1 8
          1
```

Thus 289 ÷ 3 = 96 with remainder 1.

Example-5

Divide 278 by 10.

Solution:

```
10 ) 2 7 8 ( 27
       - 2 0
         7 8
         - 7 0
           8
```

Thus 278 ÷ 10 = 27 with remainder 8.

Exercise 5.2

A. Solve:

(1) 145 ÷ 5

Solution

```
5 ) 1 4 5 ( 29
      1 0
    x 4 5
      4 5
      0 0
```

= 29 Ans:

(2) 354 ÷ 3

Solution

```
3 ) 3 5 4 ( 118
    x 3 3
      2 4
      2 4
      0 0
```

= 118 Ans:

(3) 500 ÷ 10

Solution

```
10 ) 5 0 0 ( 50
       5 0
     x 0
       0
       0
```

= 50 Ans:

(4) 600 ÷ 10

Solution

```
3 ) 6 0 0 ( 118
    1 5
    5 0 0
    1 5
    4 5 0
    4 5 0
    0 0 0
```

= 118 Ans:

(5) 810 ÷ 9

Solution

```
9 ) 8 1 0 ( 28
    1 8
  x 7 2
    7 2
    0 0
```

= 28 Ans:

(6) 152 ÷ 2

Solution

```
2 ) 1 5 2 ( 76
    1 4
  x 1 2
    1 2
    0 0
```

= 76 Ans:

(7) 615 ÷ 8

Solution

```
     8 )  6  1  5 ( 76
          5  6
        ──────────
          x  5  4
        ──────────
             4  8
             0  6
```

= 76 - 6 Ans:

(9) 912 ÷ 3

Solution

```
     3 )  9  1  2 ( 36
          9
        ──────────
          x  1  2
        ──────────
             1  2
             0  0
```

= 36 Ans:

(8) 432 ÷ 3

Solution

```
     3 )  4  3  2 ( 144
          3
        ──────────
          x  1  3  2
        ──────────
             1  2
             x  1  2
        ──────────
                1  2
                0  0
```

= 144 Ans:

B. Divide:

(1)
```
     4 )  1  7  8 ( 44
          1  6
        ──────────
          x  1  8
        ──────────
             1  6
             0  2
```

= 44 - 02 Ans:

(2)
```
     3 )  1  4  7 ( 49
          1  2
        ──────────
          x  2  7
        ──────────
             2  7
             0  0
```

= 49 Ans:

(3)
```
     2 )  1  2  8 ( 64
          1  2
        ──────────
          0  0  8
                8
        ──────────
                0
```

= 64 Ans:

(5)
```
     3 )  3  8  4 ( 128
          3
        ──────────
          0  8  4
             6
        ──────────
             2  4
             2  4
        ──────────
             0  0
```

= 128 Ans:

(7)
```
     4 )  1  3  4 ( 33
          1  2
        ──────────
          0  1  4
             1  2
        ──────────
             0  2
```

= 33-02 Ans:

(4)
```
     9 )  3  7  8 ( 42
          3  6
        ──────────
          0  1  8
             1  8
        ──────────
             0  0
```

= 42 Ans:

(6)
```
     6 )  7  2  3 ( 120
          6
        ──────────
          1  2  3
             1  2
        ──────────
             0  0  3
```

= 120-03 Ans:

(8)
```
     5 )  1  7  5 ( 35
          1  5
        ──────────
          2  5
          2  5
        ──────────
          0  0
```

= 35 Ans:

(9) $6\overline{)185}$

Solution

$$6\overline{)185}\ (\ 30$$
$$\underline{1\ 8\ 0}$$
$$0\ 0\ 5$$

= 30 Ans:

C. Word Problems:

1. 13 children shred Rs.117 equally. How much did each child get?

$$13\overline{)117}\ (\ 9$$
$$\underline{1\ 1\ 7}$$
$$0\ 0\ 0$$

3. A libration arranged 476 books equally on 7 shelves. How many books did he placed on each half?

$$7\overline{)476}\ (\ 68$$
$$\underline{4\ 2}$$
$$0\ 5\ 6$$
$$\underline{5\ 6}$$
$$0\ 0$$

5. A teacher collected 560 rupees as donation from the pupils if each pupil paid 10 rupees, how many pupils gave the donation?

$$10\overline{)560}\ (\ 56$$
$$\underline{5\ 0}$$
$$0\ 6\ 0$$
$$\underline{6\ 0}$$
$$0\ 0$$

(10) $4\overline{)324}$

Solution

$$4\overline{)324}\ (\ 81$$
$$\underline{3\ 2}$$
$$0\ 0\ 4$$
$$\underline{4}$$
$$0$$

= 81 Ans:

2. Mr. Hanif bought 7 packets of sweets for Rs.91. How much did he pay for each packet of sweet?

$$7\overline{)91}\ (\ 13$$
$$\underline{7}$$
$$2\ 1$$
$$\underline{2\ 1}$$
$$0\ 0$$

4. Amara had 564 stamps. She put 4 stamps on each page of her album. How many pages did she use.

$$4\overline{)564}\ (\ 141$$
$$\underline{5\ 6}$$
$$0\ 0\ 4$$
$$\underline{4}$$
$$0$$

CHAPTER NO.6

FRACTION

6.1 — The Meaning of Fraction

Parts of an object:
This square is divided into four parts.
The parts are of the same size, each of these parts is one quarter (1/4) of the square.
Three of these parts is three quarters (3/4) of the square.
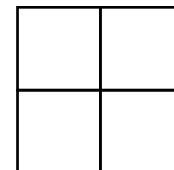
Here 1/2 means 1 out of 2 equal parts.
Read as "lover 2".
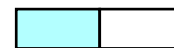
2/3 means 2 out of 3 equal parts.
Read as 2 over 3.
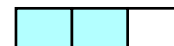
3/4 means 3 out of 4 equal parts.
Read as "3 over 4"
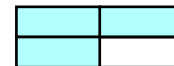
Please remember that in any fraction.

> The number written above the line is called numerator and number written below the line is called Denominator.
>
> **eg** $\dfrac{3}{4}$ **Here**   3 is Numerator
>   4 is Denominator

6.2 — Proper fraction and Improper Fraction

Look at there figures, they represent fraction. In each fraction denominator is 4 but numerators are different.

(a)   (b)   (c)

$\dfrac{5}{4}$ $\dfrac{4}{4}$ $\dfrac{3}{4}$

(d)   (e)   (f)

$\dfrac{1}{4}$ $\dfrac{7}{4}$ $\dfrac{2}{4}$
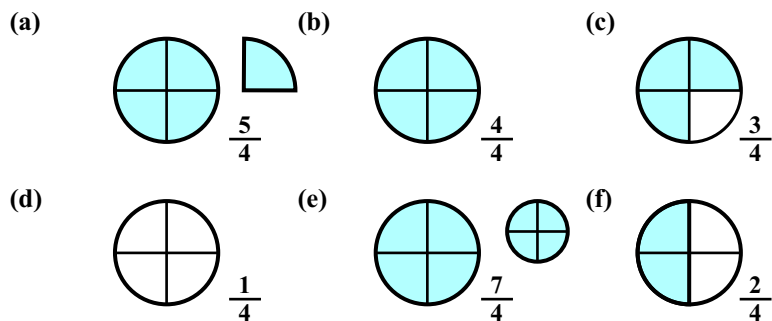
A fraction having numerator less than the denominator
is called a proper fraction.
For example: b, c, d, f.

A fraction having numerator greater than denominator is
called Improper fraction.
For example: a, e.

Exercise 6.1

Point out the proper and improper fraction of the following:

1. $\dfrac{1}{3}$ **Proper**   2. $\dfrac{2}{5}$ **Proper**

3. $\dfrac{7}{6}$ **Improper**   4. $\dfrac{8}{3}$ **Improper**

5. $\dfrac{3}{8}$ **Improper**   6. $\dfrac{11}{7}$ **Improper**

7. $\dfrac{1}{9}$ **Proper**   8. $\dfrac{3}{7}$ **Proper**

9. $\dfrac{4}{8}$ **Proper**   10. $\dfrac{2}{3}$ **Proper**

11. $\dfrac{15}{7}$ **Improper**   12. $\dfrac{8}{9}$ **Proper**

13. $\dfrac{9}{5}$ **Improper**   14. $\dfrac{8}{7}$ **Improper**

15. $\dfrac{16}{3}$ **Improper**

6.3 — Addition of Like Fractions

Please remember that the fractions with same denominators are called like fractions.

Rule:

For addition of like fractions add the numerator and keep the denominator the same.

Example-1

Solve: $\frac{5}{4} + \frac{5}{4} = \frac{5+5}{4} = \frac{10}{4}$

Solution:

$$\frac{5}{2} = \text{Ans.}$$

Example-2

Solve: $\frac{3}{8} + \frac{2}{8} + \frac{1}{8}$

Solution: $\frac{3}{8} + \frac{2}{8} + \frac{1}{8} = \frac{3+2+1}{8} = \frac{6}{8}$ Or

$$\frac{3}{4} \text{ Ans.}$$

Example-3

Salma gave 1/9 of her property in charity 4/9 to her son and 2/9 to her daughter. Find the property which she distributed.

Solution: Here we have to add 1/9, 4/9 and 2/9 to get total property. Distributed by Salma.

Hence $\frac{1}{9} + \frac{4}{9} + \frac{2}{9} = \frac{1+4+2}{8} = \frac{7}{9}$ Ans.

Exercice 6.2

A. Solve:

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

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

$= \frac{3}{4}$ **Ans:**

(2) $\frac{2}{5} + \frac{1}{5}$

$= \frac{2+1}{5}$

$= \frac{3}{5}$ **Ans:**

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

$= \frac{3+1}{6}$ $\frac{{}^1\cancel{3}}{\cancel{6}_2}$

$= \frac{1}{2}$ **Ans:**

(4) $\frac{4}{6} + \frac{1}{6}$

$= \frac{2+1}{5}$

$= \frac{3}{5}$ **Ans:**

(5) $\frac{2}{9} + \frac{6}{9}$

$= \frac{2+6}{9}$ $\frac{{}^1\cancel{3}}{\cancel{6}_2}$

$= \frac{8}{9}$ **Ans:**

(6) $\frac{1}{8} + \frac{3}{8} + \frac{1}{8}$

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

$= \frac{11}{8}$ **Ans:**

(7) $\frac{2}{8} + \frac{3}{8} + \frac{2}{8}$

$= \frac{2+3+2}{8}$

$= \frac{7}{8}$ **Ans:**

(8) $\frac{1}{7} + \frac{1}{7} + \frac{4}{7}$

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

$= \frac{6}{8}$ **Ans:**

(9) $\dfrac{1}{5}+\dfrac{2}{5}+\dfrac{1}{5}$

$= \dfrac{1+2+1}{5}$

$= \dfrac{4}{5}$ Ans:

(10) $\dfrac{2}{7}+\dfrac{3}{7}+\dfrac{1}{7}$

$= \dfrac{2+3+7}{7}$

$= \dfrac{12}{7}$ Ans:

B. Add:

(1) $\dfrac{2}{9}$ and $\dfrac{5}{9}$

$\dfrac{2}{9}+\dfrac{5}{9}$

$= \dfrac{1+5}{9}$

$= \dfrac{7}{98}$ Ans:

(2) $\dfrac{2}{4}$ and $\dfrac{1}{4}$

$\dfrac{2}{4}+\dfrac{1}{4}$

$= \dfrac{2+1}{4}$

$= \dfrac{3}{4}$ Ans:

(3) $\dfrac{2}{6}$ and $\dfrac{1}{6}$

$\dfrac{2}{6}+\dfrac{1}{6}$

$= \dfrac{2+1}{6}$

$= \dfrac{3^1}{6^2}$

$= \dfrac{1}{2}$ Ans:

(4) $\dfrac{3}{7}$ and $\dfrac{2}{7}$

$\dfrac{3}{7}+\dfrac{2}{7}$

$= \dfrac{3+2}{7}$

$= \dfrac{5}{7}$ Ans:

(5) $\dfrac{8}{9}$ and $\dfrac{1}{9}$

$\dfrac{8}{9}+\dfrac{1}{9}$

$= \dfrac{8+1}{9}$

$= \dfrac{9}{9} = 1$ Ans:

(6) $\dfrac{1}{6},\dfrac{2}{6}$ and $\dfrac{1}{6}$

$\dfrac{1}{6}+\dfrac{2}{6}+\dfrac{1}{6}$

$= \dfrac{1+2+1}{6}$

$= \dfrac{4}{6} = \dfrac{2}{3}$ Ans:

(7) $\dfrac{1}{5},\dfrac{2}{5}$ and $\dfrac{1}{5}$

$\dfrac{1}{5}+\dfrac{2}{5}+\dfrac{1}{5}$

$= \dfrac{1+2+1}{5}$

$= \dfrac{4}{5}$ Ans:

(8) $\dfrac{1}{7},\dfrac{2}{7}$ and $\dfrac{3}{7}$

$\dfrac{1}{7}+\dfrac{2}{7}+\dfrac{3}{7}$

$= \dfrac{1+2+3}{7}$

$= \dfrac{6}{7}$ Ans:

(9) $\dfrac{1}{8},\dfrac{3}{8}$ and $\dfrac{3}{8}$

$\dfrac{1}{8}+\dfrac{3}{8}+\dfrac{3}{8}$

$= \dfrac{1+3+3}{8}$

$= \dfrac{7}{8}$ Ans:

(10) $\dfrac{3}{9},\dfrac{2}{9}$ and $\dfrac{3}{9}$

$\dfrac{3}{9}+\dfrac{2}{9}+\dfrac{3}{9}$

$= \dfrac{3+2+3}{9}$

$= \dfrac{8}{9}$ Ans:

C. Word Problems:

(1) Salma read 2/5 of book on the first day, 1/5 on the second day. How much of the book did she read in all?

$$\frac{2}{5} + \frac{1}{5}$$

$$= \frac{2+1}{5}$$

$$= \frac{3}{5} \qquad \textbf{Ans:}$$

(2) Ali gave 3/6 of his money to Asif and 2/6 to Hina. How much money did she give in all?

$$\frac{3}{6} + \frac{2}{6}$$

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

$$= \frac{5}{6} \qquad \textbf{Ans:}$$

(3) Akram travelled 2/8 kilometers on foot and 5/8 kilometers on bicycle. Find the total distance travelled by him.

$$\frac{2}{8} + \frac{5}{8}$$

$$= \frac{2+5}{8}$$

$$= \frac{7}{8} \qquad \textbf{Ans:}$$

(4) Sadia spent 1/7 of her money on first shop, 2/7 of her money on second shop and 3/7 of her money on third shop. What part of her money did she spend in all?

$$\frac{1}{7} + \frac{2}{7}$$

$$= \frac{1+2}{7}$$

$$= \frac{3}{7} \qquad \textbf{Ans:}$$

(5) Waqar gave 2/8 of his property in mosque, 3/8 to his son and 2/8 to his daughter. Find the property which he distributed.

$$\frac{2}{8} + \frac{3}{8}$$

$$= \frac{2+3}{8}$$

$$= \frac{5}{8} \qquad \textbf{Ans:}$$

(6) Naseema wrote 1/5 of copy on the first day, 3/5 on the second day. How much of the copy did she write in all?

$$\frac{1}{5} + \frac{3}{5}$$

$$= \frac{1+3}{5}$$

$$= \frac{4}{5} \qquad \textbf{Ans:}$$

(7) Raza ran 3/6 kilometers on foot and 2/6 kilometers on his motorcycle. Find the total distance travelled by him.

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

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

$$= \frac{5}{6} \qquad \textbf{Ans:}$$

(8) Razia spent 3/5 of her money on first day of Eid, 1/5 of her money on second day of Eid and 1/5 of her money on third day of Eid. How much money did she spend in all?

$$\frac{3}{5} + \frac{1}{5} + \frac{1}{5}$$

$$= \frac{2 + 1 + 1}{5}$$

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

$$= 1 \qquad \textbf{Ans:}$$

6.4 — **Subtraction of like Fraction**

Rule: Subtract the numerators and keep the denominators the same.

Example-1

Solve $\frac{7}{9} - \frac{2}{9}$

Solution:

$$\frac{7}{9} - \frac{2}{9} = \frac{7-2}{9} = \frac{5}{9}$$

Hence

$$\frac{7}{9} - \frac{2}{9} = \frac{5}{9}$$

Example-2

Shahida has 3/4 kilograms of sugar. She gave 1/4 kilogram to her sister. How mcuh sugar is left with her?

Solution:

$$\frac{3}{4} - \frac{1}{4} = \frac{3-1}{4} = \frac{2}{4} = \frac{1}{2} \quad \text{Ans}$$

Hence: 2/4 kilogram of sugar is left with her.

Example-3

Shabana has 2/8 kilograms of Salt. She put 1/8 kilogram in a pot. How much slat is left with her?

Solution:

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

Hence: 1/8 kilogram of salt is left with her.

Exercise 6.3

A. Solve

(1) $\dfrac{2}{3} - \dfrac{1}{3}$

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

$= \dfrac{1}{7}$

(2) $\dfrac{6}{7} - \dfrac{3}{7}$

$= \dfrac{6 - 3}{7}$

$= \dfrac{3}{7}$

(3) $\dfrac{6}{7} - \dfrac{2}{7}$

$= \dfrac{6 - 2}{7}$

$= \dfrac{4}{7}$

(4) $\dfrac{5}{8} - \dfrac{2}{8}$

$= \dfrac{5 - 2}{8}$

$= \dfrac{3}{8}$

(5) $\dfrac{7}{9} - \dfrac{5}{9}$

$= \dfrac{7 - 5}{9}$

$= \dfrac{4}{9}$

(6) $\dfrac{4}{5} - \dfrac{1}{5}$

$= \dfrac{4 - 12}{5}$

$= \dfrac{3}{5}$

(7) $\dfrac{2}{7} - \dfrac{1}{7}$

$= \dfrac{2 - 1}{7}$

$= \dfrac{1}{7}$

(8) $\dfrac{3}{5} - \dfrac{2}{5}$

$= \dfrac{3 - 2}{5}$

$= \dfrac{1}{5}$

(9) $\dfrac{7}{9} - \dfrac{4}{9}$

$= \dfrac{7 - 4}{9}$

$= \dfrac{{}^{1}\cancel{3}}{\cancel{9}_{3}} = \dfrac{1}{3}$

(10) $\dfrac{8}{9} - \dfrac{3}{9}$

$= \dfrac{8 - 3}{97}$

$= \dfrac{5}{9}$

(11) $\dfrac{4}{7} - \dfrac{4}{7}$

$= \dfrac{4 - 4}{7}$

$= \dfrac{0}{7}$

(12) $\dfrac{7}{8} - \dfrac{2}{8}$

$= \dfrac{7 - 2}{8}$

$= \dfrac{5}{8}$

(13) $\dfrac{4}{5} - \dfrac{2}{5}$

$= \dfrac{4 - 2}{5}$

$= \dfrac{2}{5}$

(14) $\dfrac{2}{4} - \dfrac{1}{4}$

$= \dfrac{2 - 1}{4}$

$= \dfrac{1}{4}$

(15) $\dfrac{6}{9} - \dfrac{4}{9}$

$= \dfrac{6 - 4}{9}$

$= \dfrac{2}{9}$

(16) $\dfrac{5}{6} - \dfrac{3}{6}$

$= \dfrac{5 - 3}{6}$

$= \dfrac{{}^{1}\cancel{2}}{\cancel{6}_{3}} = \dfrac{1}{3}$

(17) $\dfrac{3}{8} - \dfrac{1}{8}$

$= \dfrac{3 - 1}{8} = \dfrac{\overset{1}{2}}{\underset{4}{8}}$

$= \dfrac{1}{4}$

(18) $\dfrac{6}{9} - \dfrac{1}{9}$

$= \dfrac{6 - 1}{9}$

$= \dfrac{5}{9}$

(19) $\dfrac{4}{7} - \dfrac{1}{7}$

$= \dfrac{4 - 1}{7}$

$= \dfrac{3}{7}$

(20) $\dfrac{3}{5} - \dfrac{2}{5}$

$= \dfrac{3 - 2}{5}$

$= \dfrac{1}{5}$

B: Word Problems:

1. Hanif has 4/5 part of cake. He gave 2/5 to his brother out of. How much cake is left with him.

$$\dfrac{4}{5} - \dfrac{2}{5}$$

$$= \dfrac{4 - 2}{5}$$

$$= \dfrac{2}{5}$$

2. Kiran has 7/9 meters of cloth. She uses 2/9 meters of cloth to make a dress for her doll. Find the remaining cloth?

$$\dfrac{7}{9} - \dfrac{2}{9}$$

$$= \dfrac{7 - 2}{9}$$

$$= \dfrac{5}{9}$$

3. Mother bought 6/7 parts of cake for tea time. The children ate 4/7 part of the cake. How much cake was left over?

$$\dfrac{6}{7} - \dfrac{4}{7}$$

$$= \dfrac{6 - 4}{7}$$

$$= \dfrac{2}{7}$$

4. Find the difference between 8/9 and 1/9.

$$\dfrac{8}{9} - \dfrac{1}{9}$$

$$= \dfrac{8 - 1}{9}$$

$$= \dfrac{7}{9}$$

5. Subtract 7/6 from 3/6.

$$\frac{7}{6} - \frac{3}{6}$$

$$= \frac{7-3}{6}$$

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

6.5 Addition of decimal fractions up to two decimal places.

Example-1 Add 0.4 and 0.2

Solution: Look at the figure


```
        0.6
   0.4      0.2
```

0.1
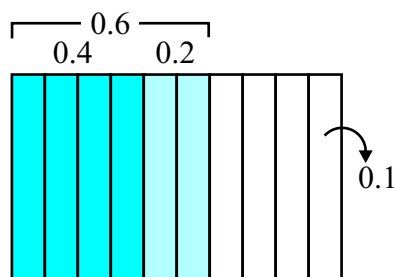
Each part = 0.1

Dark Blue + Light blue portion =

```
  0.4
+ 0.2
= 0.6
```

Total coloured portion

Yellow part = 0.4
Blue part = 0.2

Example-1 Add 0.05 and 0.04

Solution: Look at the figure


```
        0.6
   0.05    0.02
```
0.01

Each smaller square

represent $\frac{1}{100}$ = 0.01

Yellow portion = 0.05
Blue portion is 0.04
Yellow portion + Blue portion = 0.05
                              + 0.04

Total coloured portions = 0.09
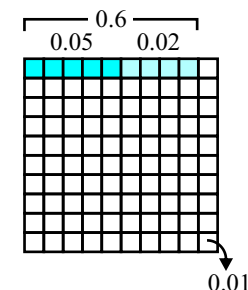
To add decimals, the decimal points of the numbers to be added must be directly below one another. Then add in the usual way and write the decimal point of the answer below the other decimal points.

Exercise 6.4

Find the sum:

(1)
```
  0 . 1
+ 0 . 2
─────────
  0 . 3
```

(2)
```
  0 . 2
+ 0 . 2
─────────
  0 . 4
```

(3)
```
  0 . 3
+ 0 . 4
─────────
  0 . 7
```

(4)
```
  0 . 4
+ 0 . 3
─────────
  0 . 7
```

(5)
```
  0 . 3
+ 0 . 5
─────────
  0 . 8
```

(6)
```
  0 . 4
+ 0 . 5
─────────
  0 . 9
```

(7)
```
  0 . 01
+ 0 . 02
---------
  0 . 03
```

(8)
```
  0 . 03
+ 0 . 04
---------
  0 . 07
```

(9)
```
  0 . 01
+ 0 . 05
---------
  0 . 06
```

(10)
```
  0 . 02
+ 0 . 06
---------
  0 . 08
```

6.6 **Subtraction of decimal fractions up to two decimal points.**

Example-1 Solve 0.8 - 0.4

Solution: Look at the figure
Look at the figure

Each part $= \frac{1}{10} = 0.01$

Red part = 0.8
Crossed part = 0.4
Red part - crossed part =
```
  0 . 8
- 0 . 4
```
Left over red part = 0. 4
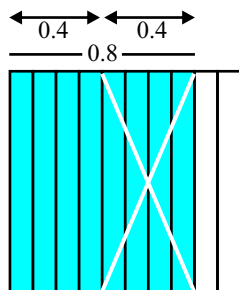
Example-2 Solve 0.18 - 0.08

Solution: Each small square = = 0.01
Filled portion = 0.18
Crossed portion = 0.08

Filled portion - crossed portion =
```
  0.18
- 0.08
```
Left over filled portion = 0.10
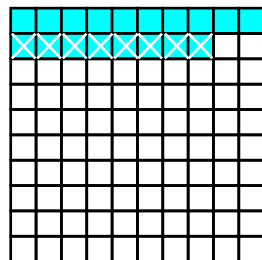
Exercise 6.5

Find the difference:

(1)
```
  0 . 7
- 0 . 3
-------
```

(2)
```
  0 . 8
- 0 . 4
-------
```

(3)
```
  0 . 9
- 0 . 5
-------
```

(4)
```
  0 . 7
- 0 . 5
-------
```

(5)
```
  0 . 8
- 0 . 3
-------
```

(6)
```
  0 . 6
- 0 . 2
-------
```

(7)
```
  0 . 5
- 0 . 1
-------
```

(8)
```
  0 . 9
- 0 . 8
-------
```

(9)
```
  0 . 09
- 0 . 07
--------
```

(10)
```
  0 . 04
- 0 . 01
--------
```

Word Problems:

Example-1 Ahmad studied Mathematics for $\frac{3}{7}$ hours in the morning and for $\frac{2}{7}$ hours in the evening. How many hours did Ahmad study altogether.

Solution:
In the morning Ahmad studied for $\frac{3}{7}$ hours

In the evening Ahmad studied for $+\frac{2}{7}$ hours

Altogether Ahmad studied for $\frac{5}{7}$ hours

Method

$$\frac{3}{7} + \frac{2}{7}$$
$$= \frac{3+2}{7}$$
$$= \frac{5}{7}$$

Example-2 There is 0.95 kilogram of oil in a tin, 0.35 kilogram is used for cooking. How much oil is left in the tin..

Solution:
Oil in the tin   0.95 kg
Oil used in cooking   -   0.35 kg
Oil left in the tin   0.60 kg

Exercise 6.6

1. Apiece of rod is $\dfrac{4}{9}$ metres long, another piece of rod is $\dfrac{3}{9}$ metres long. What is the total length of these two pieces of rod.

$$\dfrac{4}{9} + \dfrac{3}{9}$$

$$= \dfrac{4 + 3}{9}$$

$$= \dfrac{7}{9} \quad \textbf{Ans:}$$

2. Anjum bought a cake and eat $\dfrac{2}{5}$ of it, her friend Sadia eat $\dfrac{3}{5}$ of the cake. Find how much cake did both of them eat?

$$\dfrac{2}{5} + \dfrac{3}{5}$$

$$= \dfrac{2 + 3}{5}$$

$$= \dfrac{\cancel{5}}{\cancel{5}} = 1 \quad \textbf{Ans:}$$

3. A labourer dug $\dfrac{5}{16}$ part of a well on Monday and $\dfrac{6}{16}$ part on Tuesday. Find how much part of the well was dug in two days.

$$\dfrac{5}{16} + \dfrac{6}{16}$$

$$= \dfrac{5 + 6}{16}$$

$$= \dfrac{11}{16} \quad 1 \quad \textbf{Ans:}$$

4. Maria used $\dfrac{2}{7}$ part of the cloth for handkerchief and $\dfrac{3}{7}$ part for making a doll. Find how much part of the cloth was used by Maria.

$$\dfrac{2}{7} + \dfrac{3}{7}$$

$$= \dfrac{2 + 3}{7}$$

$$= \dfrac{5}{7} \quad \textbf{Ans:}$$

5. What should be added to $\dfrac{3}{13}$ to get $\dfrac{10}{13}$.

$$\dfrac{3}{13} - \dfrac{10}{13}$$

$$= \dfrac{3 - 10}{13}$$

$$= \dfrac{-7}{13} \quad \textbf{Ans:}$$

CHAPTER NO.7

MEASUREMENT

7.1   Measurement of Length

We have learnt in class II that for accurate measurement of length, the basic unit is metre. We write 'm' for metre.
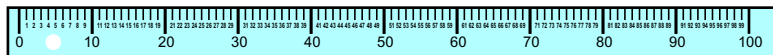
This is a metre ord. Metre rod is used to measure length of cloth or different objects. Smaller lengths are measured in centimetres. We write 'cm' for centimetre.

1 metre = 100 centimetres
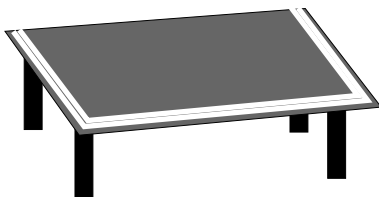
1 m = 100 cm

Example-1

The length of the table is   2   metres

The breadth of the table is 1   metre.

Example-2
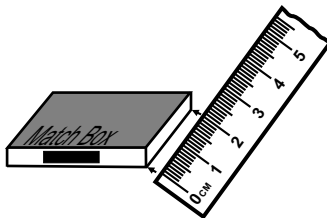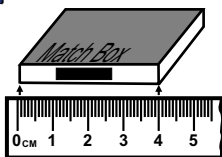
The length of the match box is   4   centimetres.

The breadth of the match box is 2   centimetres.

Exercise 7.1

REMEMBER

1 metre = 100 centimetres

1 m = 100 cm

Measure the length and the breadth of the following objects and write answers in the boxes.

1.

The length of the black board is 20 cm

The breadth of the black board is 30 cm

1.
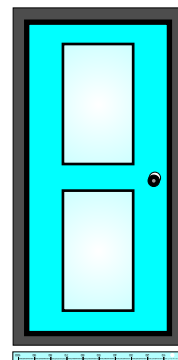
The length of the door is 20 cm

The breadth of the door is 10 cm
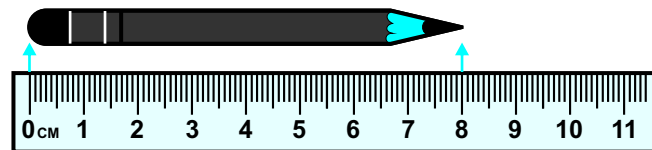
The length of the pencil is   8   cm.

4.

The length of the tooth brush is $\boxed{7}$ cm

6.
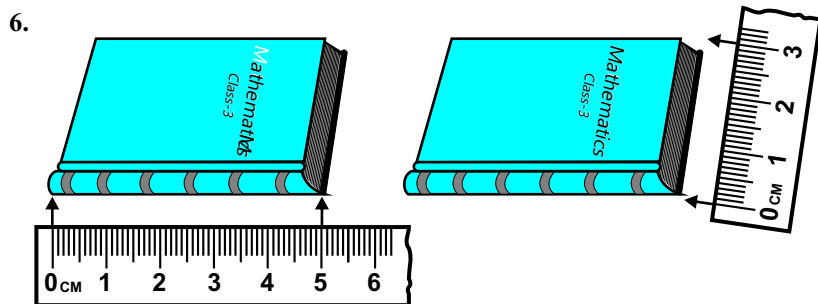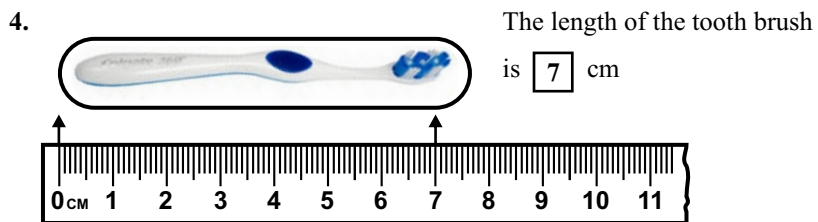
The length of the book is $\boxed{5}$ cm.

The breadth of the book is $\boxed{3}$ cm.

6.
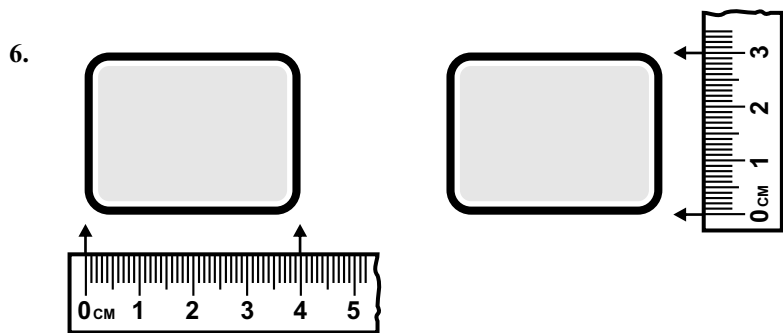
The length of the slate is $\boxed{4}$ cm.

The breadth of the slate is $\boxed{3}$ cm.

Fill in the blanks:

7. For metre we write _____ m _____.

8. For centimeter we write _____ cm _____.

9. There are __100__ centimetres in a metre.

10. 3 metres = __300__ centimetres.

11. 7 metres = __100__ centimetres.

12. 400 centimetres = __4__ metres.

7.2 — Kilometre

Long distances are measured in kilometres.

For kilometre we write 'km'.

1 kilometre = 1000 metres

1 km = 1000 m

Conversion of units of length:

Example-1 Convert the following metres into centimetres.

(i) 2 metres   (ii) 4 metres.

Solution:

(i) 2 metres

1 metre = 100 centimetres

2. metres = 2 x 100 centimetres

= 200 centimetres

2 m = 200 cm

$$
\begin{array}{r}
1\,0\,0 \\
\text{x} \quad 2 \\
\hline
2\,0\,0 \\
\end{array}
$$

(ii)   4 metres.

1 metre =   100 centimetres

4. metres   =   4 x 100 centimetres

          =   400 centimetres

4 m   =   400 cm

$$\begin{array}{r} 1\,0\,0 \\ \times\quad 4 \\ \hline 4\,0\,0 \end{array}$$

Example-2

Convert the following centimetres into metres.

(i)   300 cm   (ii)   700 cm

Solution:

To change the centimetres into metres, we divide the number of centimetres by 100.

(i)   300 cm

300 cm = (300 ÷ 100)m   **OR**

As 100 cm = 1 m

= $\frac{300}{100}$ m

=   3 m

300 cm = 3 m

$$100\overline{)300}(3 \\ \underline{-300} \\ 000$$

(ii)   700 cm

700 cm = (700 ÷ 100)m

= $\frac{700}{100}$ m

=   7 m

700 cm = 7 m

OR

$$100\overline{)700}(7 \\ \underline{-700} \\ 000$$

Example-3

Convert 2 metres 30 centimetres into centimetres..

Solution:

1 m   =   100 cm

2 m   =   2 x 100 cm

          =   200 cm

2m 30cm = 200 cm + 30 cm

          = 230 cm

> **REMEMBER**
> To change metres and centimetres into centimetres multiply the number of metres by 100 to convert them into centimetres. Now add the remaining centimetres in it.

Example-4

Convert 4 kilometres into metres.

Solution:

1 kilometrem = 1000 metres

4 kilometres = 4 x 1000 metres

          = 4000 metres

4 km   = 4000 m

> **NOTE**
> To convert kilometres into metres, multiply the number of kilometres by 1000.

$$\begin{array}{r} 1\,0\,0\,0 \\ \times\quad 4 \\ \hline 4\,0\,0\,0 \end{array}$$

Example-5

Convert 5000 metres in kilometres.

Solution: To change metres into kilometres, divide the number of metres by 1000.

5000 metres = (5000 ÷ 1000) km

= $\frac{5000}{1000}$ km

= $\frac{5}{1}$ km

= 5 km

∴ 5000 metres = 5 kilometres.

$$1000\overline{)5000}(5 \\ \underline{-5000} \\ 0000$$

Convert 5 km 230 m into metres..

Example-6

Solution:

1 km	=	1000 m
5 km	=	1000 x 5
or 5 km	=	5000 m
5 km 230 m	=	(5000 + 230) m
5 km 230 m	=	5230 m

REMEMBER

To change kilometres and metres into metres, multiply the number of kilometres by 1000 and add the remaining metres in it.

Exercise 7.2

1. Convert the following into metres.

(i) 300 cm

Solution:

300 cm $= (300 \div (00)$cm

$= $ As   100 cm $=$ Im

$= \dfrac{300}{100}$ $= 3$m

$= $ 300cm $= 3$m Ans:

(iii) 900 cm

Solution:

900 cm $= (500 \div (100)$cm

$= \dfrac{900}{100}$ $= 9$m

$= $ 900cm $= 9$m Ans:

(ii) 500 cm

Solution:

500 cm $= (500 \div (100)$cm

$= \dfrac{500}{100}$ $= 5$m

$= $ 500cm $= 5$m   Ans:

---

2. Convert the following into centimetres.

(i) 4 m

Solution:

1 meter $=$ 100 centimeters

4 meter $=$ 4 x 100 centimeters

$= $ 400 centimeters

4 meter $=$ 400 cm   Ans:

(ii) 7 m

Solution:

4 meter $=$ 4 x 100 cm

$= $ 400 cm

4 meter $=$ 400 cm   Ans:

(iii) 11 m

Solution:

11 meter $=$ 11 x 100 cm

$= $ 1100 cm

11 meter $=$ 1100 cm   Ans:

3. Convert the following into centimetres.

(i) 2m 25 cm

Solution:

1 meter $=$ 100 cm

2 meter $=$ 200 cm

$= $ 200 cm + 25 cm

$= $ 225 cm   Ans:

(ii) 75 m 75 cm

Solution:

$= (75$ cm $+ 75$ cm$)$

$= 150$ cm

Ans:

(iii) 6 m 85 cm

Solution:

1 meter $=$ 100 cm

6 meter $=$ 600 cm

$= (200$ cm $+ 85)$ cm

$= 685$ cm   Ans:

4. Convert the following into kilometres.

(i)   3000 m

Solution:

$3000 \text{ cm} = (3000 \div 1000) \text{ km}$

$= \dfrac{3000}{1000} \text{ km}$

$= \dfrac{3}{1} \text{ km}$

$= 3 \text{ km}$

$\therefore 5000 \text{ m} = 5 \text{ km}$ Ans:

(ii)   7000 cm

Solution:

$7000 \text{ cm} = (7000 \div 1000) \text{ km}$

$= \dfrac{7000}{1000} \text{ km}$

$= \dfrac{7}{1} \text{ km}$

$= 7 \text{ km}$

$\therefore 7000 \text{ m} = 7 \text{ km}$ Ans:

(iii)   9000 m

Solution:

$9000 \text{ cm} = (9000 \div 1000) \text{ km}$

$= \dfrac{9000}{1000} \text{ km}$

$= \dfrac{9}{1} \text{ km}$

$= 9 \text{ km}$

$\therefore 9000 \text{ m} = 5 \text{ km}$ Ans:

5. Convert the following into metres.

(i)   5 km

Solution:

$1 \text{ km} = 1000 \text{ m}$

$5 \text{ km} = 5000 \text{ m}$

$= 1000 \times 5$

$5 \text{ km} = 5000 \text{ m}$

Ans:

(ii)   6 km

Solution:

$6 \text{ km} = 1000 \times 6$

$= 6000 \text{ m}$

$6 \text{ km} = 6000 \text{ m}$

Ans:

(iii)   10 km

Solution:

$1 \text{ km} = 1000 \text{ m}$

$= 10 \times 1000$

$10 \text{ km} = 10{,}000 \text{ m}$

Ans:

6. Convert the following into metres.

(i)   2 km 225m

Solution:

$2 \text{ km} = 1000 \times 2$

$= 2000 \text{ m}$

$2 \text{ km } 225 \text{ m} = (2000 + 225) \text{ m}$

$= 2225 \text{ m}$

$2 \text{ km } 225 \text{ m} = 2225 \text{ m}$

Ans:

(ii)   4 km 250 m

Solution:

$4 \text{ km} = 1000 \times 4$

$= 4000 \text{ m}$

$4 \text{ km } 250 \text{ m} = (4000 + 250) \text{ m}$

$= 4250 \text{ m}$

$4 \text{ km } 250 \text{ m} = 4250 \text{ m}$

Ans:

(iii)   7 km 375 m

Solution:

$7 \text{ km} = 1000 \times 7$

$= 7000 \text{ m}$

$7 \text{ km } 376 \text{ m} = (7000 + 375) \text{ m}$

$= 7375 \text{ m}$

$7 \text{ km } 375 \text{ m} = 7375 \text{ m}$

Ans:

7.3 — Addition of metres and centimetres

Example-1

Add 3m 70cm and 4m 15cm.

Solution: Add 'cm' with 'cm' and 'm' with 'm'

	m	cm
	3	70
+	4	15
	7	85
	8	70

The sum is 7m 85cm.

Example-2

Add 7m 75cm with 8m 35 cm.

Solution:

	m	cm
	①	
	7	75
+	8	35
	16	10

As 75cm + 35cm = 110cm

110cm = 1m 10cm

The sum is 16m 10cm.

Example-3

The length of one piece of cloth is 4m 75cm and the length of the other piece of cloth is 3m 75cm. Find the total length of the two pieces.

Solution:

	m	cm
	①	
	4	75
+	3	75
	8	50

As 75cm + 75cm = 150cm

150cm = 1m 50cm

Length of the two pieces is 8m 50cm.

7.4 — Subtraction of metres and centimetres

Example-1

Subtract 3m 15cm from 5m 25cm.

Solution: First subtract 'cm' from 'cm' and then 'm' from 'm'

	m	cm
	5	25
-	3	15
	2	10

Answer is 2m 10cm.

Example-2

Subtract 4m 75cm from 6m 50cm.

Solution:

	m	cm
	⑤	⑮⓪ — (100+50=150)
	6	50
-	4	75
	1	75

REMEMBER
We can not subtract 75cm from 50cm.
Borrow a metre.
∴ 1m 50cm = (100+50)cm
∴ 1m 50cm = 150cm
∴ 150cm - 75cm = 75cm

Answer is 1m 75cm

The height of Saleem is 1m 30cm and height of his brother Bilal is 1m 10cm. Find the difference in their heights.

Example-3

Solution:

		m	cm
Height of Saleem		1	30
Height of Bilal	-	1	10
Difference in heights		0	20

The difference in their heights is 20cm.

Example-4

The length of a table is 4m 50cm and breadth is 2m 75cm. Find the difference between length and breadth..

Solution: First subtract 'cm' from 'cm' and then 'm' from 'm'

	m	cm
	③	⑮⓪ − (cm cm 100+50=150)
Length is	4	50
Breadth is	- 2	75
Difference is	1	75

The difference between length and breadth is 1m 75cm.

Exercise 7.3

Add the following:

1.	m	cm
	2	50
+	3	35
	5	85

2.	m	cm
	7	75
+	3	50
	10	125

3.	m	cm
	8	85
+	3	25
	11	110

Subtract:

4.	m	cm
	7	45
-	3	15
	4	30

5.	m	cm
	10	78
-	9	37
	1	41

6.	m	cm
	11	85
-	5	75
	6	10

7. Subtract 3m 5cm from 5m 75cm.

8. Subtract 8m 75cm from 10m 25cm.

7.5 Addition and subtraction of Metres and kilometres

Example-1

Add	km		m
	3	—	735
+	2	—	475

Solution:

	km	m
	①	
	3	735
+	2	475
	6	210

735m + 475m = 1210m
1210m = 1 km 210m

Sum is 6km 210m

Example-2

Find the sum of 5km 670m and 7km 450m.

Solution:

	km	m
	①	
	4	670
+	7	450
	13	120

670m + 450m = 1120m
1120m = 1 km 120m

Sum is 13km 120m

Example-3

Subtract 12km 335m from 17km 675m.

Solution:

	km		m
	17	——	675
-	12	——	335
	5		340

Answer is 5km 340m.

Example-4

Subtract 9km 675m from 11km 525m.

Solution:

1000m + 525m = 1525m

	km	m
	⑩	⟨1525⟩
	11 ——	525
-	9 ——	675
	1	850

1525m - 675m = 850m

Answer is 1km 850m.

Example-5

Zahid travelled 25 kilometres 637 metres Disatance by car and 6 kilometres 528 metres by cycle. Find the total distance he travelled altogether?

Solution:

	km	m
	①	
Distance travelled by car	25 ——	637
Distance travelled by cycle +	6 ——	528
Total distance travelled	32	165

Total distance is 32km 165m

Example-6

Ali travelled a distance of 2 kilometres 575 metres and Babar travelled 3 kilometres 685 metres for reaching a stadium. Find

how much more distance is travelled by Babar?

Solution:

		km		m
Distance travelled by Babar		3	——	685
Distance travelled by Ali	-	2	——	575
Difference		1		110

Babar travelled 1 kilometre 110 metres more than Ali.

Exercise 7.4

Solve

1.

	km		m
	15	—	300
+	17	—	525
	32		825

2.

	km		m
	56	—	200
+	32	—	525
	88		725

3.

	km		m
	39		355
-	27		475
	12		120

4.

	km		m
	59		200
-	37		525
	22		325

5. All covered a distance of 1km 575m from his house to a cricket stadium and then 2km 325m from cricket stadium to school. find the total distance covered by him.

6. Rashid travelled 4km 350m by bus and 1km 850m on foot. What was the total distance Rashid travelled?

7.6 — Mass

We use a 'kilogram' in order to weigh things like flour, rice, sugar, fruit, vegetables etc.

The basic units of mass are kilogram and gram.

We write 'kg' for kilogram and 'g' for gram.

1 kilogram = 1000 grams   1kg = 1000g

2 kg	=	2 x 1000g
2 kg	=	2000g
3 kg	=	3 x 1000g
3 kg	=	3000 g etc.

We can find mass of objects by using a simple balance.
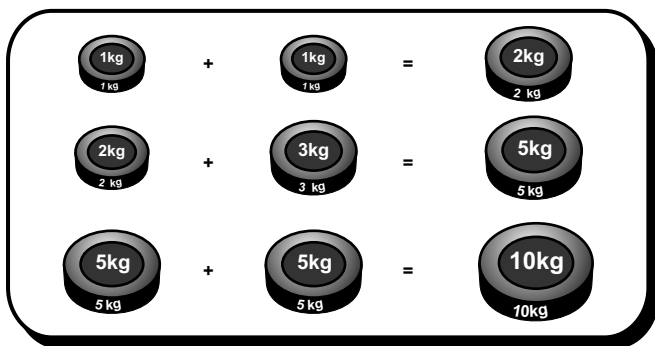
Exercise 7.5

1. Add 15kg and 12kg.

$$\begin{array}{r} 15 \text{ kg} \\ + 12 \text{ kg} \\ \hline 27 \text{ kg} \end{array}$$

2. Find the sum of 95kg and 75kg.

$$\begin{array}{r} 95 \text{ kg} \\ + 75 \text{ kg} \\ \hline 170 \text{ kg} \end{array}$$

3. Shaukat had 105kg of rice in his shop. He buys 120kg of rice more. Find the total mass of rice.

$$\begin{array}{r} 105 \text{ kg} \\ + 120 \text{ kg} \\ \hline 225 \text{ kg} \end{array}$$

4. If the mass of one bag of sugar is 75kg and mass of an other bag of sugar is 85kg. Find the total mass of both the bags.

$$\begin{array}{r} 35 \text{ kg} \\ + 85 \text{ kg} \\ \hline 160 \text{ kg} \end{array}$$

5. A shopkeeper purchased from the market 500kg of flour and 275kg of rice. Find the total mass of these items?

$$\begin{array}{r} 500 \text{ kg} \\ + 275 \text{ kg} \\ \hline 775 \text{ kg} \end{array}$$

7.7 — Conversion of Units of Mass

Example-1

Convert the following into grams.

(i) 2 kilograms   (ii) 5 kilograms.

Solution: (i)   2 kilograms

1 kilogram	=	1000 grams
2 kilogram	=	2 x 1000 grams
2 kilogram	=	2000 grams.
2 kg	=	2000 gm

$$\begin{array}{r} 1000 \\ \times \quad 2 \\ \hline 2000 \end{array}$$

(ii)   5 kilograms

1 kilograms = 1000 grams

5 kilograms = 5 x 1000 grams

5 kilograms = 5000 grams

5 kg = 5000 gm

REMEMBER
To change kilograms into grams multiply kilograms by 1000.

$$\begin{array}{r} 1000 \\ \times \quad 5 \\ \hline 5000 \\ \hline \end{array}$$

Example-2

Change the following grams into kilograms

(i)   7000 grams   (ii) 9000 grams.

Solution:

(i)   **7000 grams.**

7000 grams = (7000 ÷ 1000) kilograms

7000 grams = $\frac{7000}{1000}$ kilograms

7000 grams =   7 kilograms

7000 grams   =   7 kg

REMEMBER
To change grams into kilograms divide the number of grams by 1000.

(Ii)   **9000 grams.**

9000 grams = (9000 ÷ 1000) kilograms

9000 grams = $\frac{9000}{1000}$ kilograms

9000 grams =   9 kilograms

9000 grams   =   9 kg

Example-3

Convert the following into grams.

(i) 3kg 675gm   (ii) 5kg 250gm.

Solution:

(i)   **3 kg 675gm**

1 kilogram   = 1000 grams

3 kilogram   =   3 x 1000 grams

3 kg   =   3000 gm

3 kg 675gm =   3000 gm + 675gm

3 kg 675gm =   3675

Remember that:
To convert kilograms and grams into grams. First multiply the number of kilograms by 1000 and then adding the remaining grams in it.

(ii) 5kg 250gm.

1 kilogram   = 1000 grams

5 kilograms =   5 x 1000 grams

5 kilograms =   5000 gm

5 kg 250 gm =   5000 gm + 250gm

5 kg 250 gm =   5250 gm

Example-4

Change the following into kilograms and grams.

(i) 4275 grams   (ii) 6580 grams

Solution: (i)   4275 grams:

4275 grams =   4000 grams + 275 grams

4275 grams   =   4 x 1000 grams + 275 grams

4275 grams   =   4 x 1 kilograms + 275 grams

4275 grams   =   4 kilograms + 275 grams

4275 grams   =   4 kilograms 275 grams.

4275 gm = 4kg 275 gm

Solution: (ii) 6580 grams:

$$6580 \text{ grams} = 6000 \text{ grams} + 580 \text{ grams}$$

$$6580 \text{ grams} = 6 \times 1000 \text{ grams} + 580 \text{ grams}$$

$$6580 \text{ grams} = 6 \times 1 \text{ kilograms} + 580 \text{ grams}$$

$$6580 \text{ grams} = 6 \text{ kilograms} + 580 \text{ grams}$$

$$6580 \text{ gm} = 6 \text{kg } 580 \text{ gm}$$

Exercise 7.6

Convert the following into grams.

1. 3 kilograms.

Solution:

$$1 \text{ kg} = 1000 \text{ gm}$$
$$3 \text{ kg} = 3 \times 1000 \text{ gm}$$
$$= 3000 \text{ gm}$$
$$3 \text{ kg} = 3000 \text{ gm} \quad \textbf{Ans:}$$

2. 9 kilograms.

Solution:

$$9 \text{ kg} = 9 \times 1000 \text{ gm}$$
$$= 9000 \text{ gm}$$
$$9 \text{ kg} = 9000 \text{ gm} \quad \textbf{Ans:}$$

3.4 kg 725 gm

Solution:

$$4 \text{ kg} = 4 \times 1000 \text{ gm}$$
$$= 4000 \text{ gm}$$
$$4 \text{ kg} = 4000 \text{ gm}$$

$$4 \text{ kg } 725 \text{gm} = 4000 + 725 \text{gm}$$

Ans:

4.7 kg 900 gm

Solution:

$$7 \text{ kg} = 7 \times 1000 \text{ gm}$$
$$= 7000 \text{ gm}$$

$$7 \text{ kg } 900 \text{gm} = 907 \text{gm}$$

Ans:

Convert the following grams into kilograms.

1. 5000 grams

Solution:

$$5000 \text{ gm} = (5000 \div 1000) \text{kg}$$
$$= \frac{5000}{1000} \text{ kg}$$
$$= 5 \text{ kg}$$
$$5000 \text{ gm} = 5 \text{ kg}$$

Ans:

2. 7000 grams

Solution:

$$7000 \text{ gm} = (7000 \div 1000) \text{kg}$$
$$= \frac{7000}{1000} \text{ kg}$$
$$= 7 \text{ kg}$$
$$7000 \text{ gm} = 7 \text{ kg}$$

Ans:

3. 12000 grams

Solution:

$$12000 \text{ gm} = (12000 \div 1000) \text{kg}$$
$$= \frac{12000}{1000} \text{ kg}$$
$$= 12 \text{ kg}$$
$$12000 \text{ gm} = 12 \text{ kg}$$

Ans:

4. 15000 grams

Solution:

$$15000 \text{ gm} = (15000 \div 1000) \text{kg}$$
$$= \frac{15000}{1000} \text{ kg}$$
$$= 15 \text{ kg}$$
$$15000 \text{ gm} = 15 \text{ kg}$$

Ans:

Convert the following into kilograms and grams.

9. 4527 grams

Solution:

$$4527 \text{gm} = 4000 \text{ gm} + 527 \text{ gm}$$
$$= 4 \times 1000 \text{gm} + 527 \text{gm}$$
$$= 4 \times 1 \text{ kg} + 527 \text{ gm}$$
$$= 4 \text{ km} + 527 \text{ gm}$$
$$4527 \text{ gm} = 4 \text{ km } 527 \text{ gm} \quad \textbf{Ans:}$$

10. 7585 grams

Solution:

$$7585 \text{gm} = 7000 \text{ gm} + 585 \text{ gm}$$
$$= 7 \times 1000 \text{gm} + 585 \text{gm}$$
$$= 7 \times 1 \text{ kg} + 585 \text{ gm}$$
$$= 7 \text{ km} + 585 \text{ gm}$$
$$7585 \text{ gm} = 7 \text{ km } 585 \text{ gm} \quad \textbf{Ans:}$$

11. 9775 grams

Solution:

$$9775 \text{gm} = 9000 \text{ gm} + 775 \text{ gm}$$
$$= 9 \times 1000 \text{gm} + 775 \text{ gm}$$
$$= 9 \times 1 \text{ kg} + 775 \text{ gm}$$
$$= 9 \text{ km} + 775 \text{ gm}$$
$$9775 \text{ gm} = 9 \text{ km } 775 \text{ gm} \quad \textbf{Ans:}$$

12. 12525 grams

Solution:

$$12525 \text{gm} = 12000 \text{ gm} + 525 \text{ gm}$$
$$= 12 \times 1000 \text{gm} + 525 \text{gm}$$
$$= 12 \times 1 \text{ kg} + 525 \text{ gm}$$
$$= 12 \text{ km} + 525 \text{ gm}$$
$$12525 \text{ gm} = 12 \text{ km } 525 \text{ gm} \quad \textbf{Ans:}$$

CHAPTER NO.8

CURRENCY

We are already familiar with Pakistan Currency. Now let us count and tell the total of the amount in the following:

| 1 | 2 |

| 2 | 10 |

| 50 | 500 |

| 100 | 1000 |

We know that there are 100 paisa in one rupee. Rupee is represented by Re and Rupees are represented by Rs. Similarly paisa are represented by Ps.

1 Re = 100 Ps.

Example-1

Hadia has Rs.2 Ps.15. Her mother gives her Rs.4 Ps.30 more. Calculate the total amount with her.

Solution:

	Rs.	Ps.
Hadia has	2	15
Mother gave	+ 4	30
Total amount	**6**	**45**

Hence, the total amount with Hadia is Rs.6 Ps.45. Ans.

Example-2   Add Rs.6 Ps.45 and Rs.12 Ps.65

Solution: Here Ps are added Ps and Rs to Rs.

Rs.	Ps.
(1)	(1)
16	45
+ 12	65
29	(1)10

Hence the total amount is Rs.29 Ps.10.

Example-3   Find the difference between the amount Rs.35 Ps.50 and Rs.11 Ps.55.

Solution:

Rs.	Ps.
34	150
3̶5̶	(1) 50
- 11	55
23	95

OR

Rs.	Ps.
34	150
- 11	55
23	95

Hence, the difference is Rs.23 Ps.95.

Example-4   Rahim has Rs.60 with him. He buys a note book for Rs.14 Ps.25. Find the amount left with him.

Solution:

	Rs.	Ps.
Amount with Rahim	60	00
Cost of note book	14	25
Amount left with him	45	75

Hence, Amount left with him is Rs.45 Ps.75 Ans.

Exercise 8.1

A. Solve the following:

(1) Rs.85 Ps. 12 + Rs.12 Ps.33

Solution:

Rs	Ps
85	12
+12	33
97	45
	Ans:

(2) Rs.15 Ps. 17 + Rs.32 Ps.12

Solution:

Rs	Ps
15	17
+32	12
47	27
	Ans:

(3) Rs.25 Ps. 65 + Rs.32 Ps.11

Solution:

Rs	Ps
25	65
+32	11
57	76
	Ans:

(4) Rs.75 Ps. 63 + Rs.24 Ps.19

Solution:

Rs	Ps
75	63
+24	19
99	82
	Ans:

(5) Rs.65 Ps. 21 + Rs.21 Ps.15

Solution:

Rs	Ps
69	21
+21	15
86	36
	Ans:

(6) Rs.69 Ps. 58 + Rs.23 Ps.25

Solution:

Rs	Ps
69	58
+23	25
92	83
	Ans:

(7) Rs.56 Ps. 25 + Rs.38 Ps.16

Solution:

Rs	Ps
56	25
+38	16
94	41
	Ans:

(8) Rs.18 Ps. 93 + Rs.45 Ps.19

Solution:

Rs	Ps
18	93
+45	19
64	12
	Ans:

(9) Rs.77 Ps. 92 + Rs.14 Ps.33

Solution:

Rs	Ps
77	92
+14	33
92	25
	Ans:

(10) Rs.38 Ps. 53 + Rs.54 Ps.25

Solution:

Rs	Ps
38	53
+54	25
92	78
	Ans:

B. Solve the following:

(1) Rs.55 Ps.29 - Rs.43 Ps.19

Solution:

Rs	Ps
55	29
-43	19
12	10
	Ans:

(2) Rs.88 Ps.75 - Rs.33 Ps.23

Solution:

Rs	Ps
88	75
-33	23
55	52
	Ans:

(3) Rs.98 Ps.77 - Rs.23 Ps.22

Solution:

Rs	Ps
38	77
-23	22
75	55
	Ans:

(4) Rs.96 Ps.56 - Rs.44 Ps.32

Solution:

Rs	Ps
96	56
-44	32
52	24
	Ans:

(5) Rs.76 Ps.66 - Rs.51 Ps.12

Solution:

Rs	Ps
76	66
-51	-12
25	54
	Ans:

(6) Rs.97 Ps.56 - Rs.28 Ps.20

Solution:

Rs	Ps
97	56
-28	20
69	36
	Ans:

(7) Rs.37 Ps.76 - Rs.28 Ps.27

Solution:

Rs	Ps
37	76
-28	27
9	49
	Ans:

(8) Rs.70 Ps.55 - Rs.25 Ps.25

Solution:

Rs	Ps
70	55
-25	25
55	30
	Ans:

(9) Rs.53 Ps.29 - Rs.40 Ps.10

Solution:

Rs	Ps
53	29
-40	10
13	19
	Ans:

(10) Rs.80 Ps.40 - Rs.26 Ps.28

Solution:

Rs	Ps
80	40
-26	28
54	12
	Ans:

C. Word problems:

(1) Irfan had Rs.70 Ps.75. His father gave him Rs.50 Ps.60. Find the total amount.

Rs	Ps
70	75
+50	60
121	35
	Ans:

(2) I have Rs.20 Ps.80. My mother gave me Rs.15 Ps.75. Find the total amount.

Rs	Ps
20	80
+15	75
36	55
	Ans:

(3) A man earns Rs.55 Ps.65 in a day find his earnings for two days.

Rs	Ps
55	65
+55	65
111	30
	Ans:

(4) What should be added in Rs.25 Ps.25 to get Rs.50 ?

Rs	Ps
25	25
+25	25
50	30
	Ans:

(5) What should be subtracted from Rs.75 to get Rs.20 Ps.80 ?

Rs	Ps
75	80
+20	80
96	60
	Ans:

CHAPTER NO.9

TIME

9.1 — Unit of Time

We already know that there are 24 hours in a day. And 7 days make a week. In this class we will read more about units of time. Time is measured in different units. The usual units of time are second, minute, hour, day, week, month and year.

The following table shows the relationship among different units of time.

1	Minute	=	60 Seconds
1	Hour =		60 Minutes or 0 degree
1	Day =		24 Hours
1	Week	=	7 Days
1	Month	=	30 Days
1	Year =		12 Months

9.2 — Mutual conversion of units of Time

(I)   To convert Minutes into Seconds:

If we convert minutes into seconds, then we multiply the number minutes by 60.

Example-1   Convert 13 minutes into seconds

Solution: Since 1 minute = 60 seconds, therefore

13 minutes = (13 x 60) seconds = 780 seconds.

(ii)   To convert Hours into Minutes:

If we convert hours into minutes, then we multiply the number of hours by 60.

Example-2   Convert 9 hours into minutes.

Solution: Since 1 hour = 60 minutes, therefore

9 hours = (9 x 60) minutes = 540 minutes.

Example-3   Convert 3 hours, 35 minutes and 56 seconds into seconds.

Solution: **3** hours   =   (3 x 60) minutes

=   180 minutes

3 hours and 35 minutes

=   (180 + 35) minutes = 215 minutes

=   (215 x 60) seconds = 12900 seconds

Thus, 3 hours, 35 minutes and 56 seconds

= (12900 + 56) seconds = 12956 seconds

AN OTHER METHOD				
Hours	-	Minutes	-	Seconds
3	-	35	-	56

x   60   (60 minutes = 1 Hour)
_____
180   minutes
+   35   minutes (given)
_____
215   Total minutes
x   60   (60 seconds = 1 minute)
_____
12900   seconds
+   56   seconds (given)
_____
12956   Total seconds

(iii) **To convert Days into Hours:**

If we convert days into hours, then we multiply the number of days by 24.

Example-4 Convert 7 days and 19 hours into hours.

Solution: Since 1 day = 24 hours, therefore

7 days = (7 x 24) hours = 168 hours.

Thus, 7 days and 19 hours

= (168 + 19) hours = 187 hours.

AN OTHER METHOD		
Days	**-**	**Hours**
7	-	19
x 24		
28		minutes
+ 140		
168		Hours (from Days)
+ 19		Hours (given)
187		Total Hours

(iv) **To convert Second into Minutes:**

If we convert seconds into minutes, then we divide the number of seconds by 60.

Example-5 Convert 342 seconds into minutes.

Solution:

$$60\overline{)342}\ (5.7 \longrightarrow \text{minutes}$$
$$\underline{300}$$
$$420$$
$$\underline{420}$$
$$0 \longrightarrow \text{seconds}$$

Thus, 342 seconds = 5 minutes and 42 seconds.

(v) **To convert Minutes into Hours:**

If we convert minutes into hours, then we divide the number of minutes by 60.

Example-6 Convert 577 minutes into hours.

Solution:

$$60\overline{)577}\ (9 \longrightarrow \text{Hours}$$
$$\underline{-540}$$
$$37 \longrightarrow \text{Minutes}$$

Thus, 577 minutes = 9 hours and 37.

(vi) **To convert Hours into Days:**

If we convert hours into days, then we divide the number of hours by 24.

Convert 420 hours into days.

Example-7

Solution:

$$24\overline{)420}\ (17 \longrightarrow \text{Days}$$
$$\underline{24}$$
$$180$$
$$\underline{168}$$
$$12 \longrightarrow \text{Hours}$$

Thus, 420 hours = 17 days 12 hours.

(vii) **To convert Years into Months:**

If we convert years into months, then we multiply the number of years by 12.

Convert 40 years into months.

Example-8

Solution: As 1 year = 12 months.

Therefore, 40 years = 40 x 12 months

= 480 months.

(viii) **To convert Months into Years:**

If we convert months into years, then we divide the number of months by 12.

Example-9 Convert 45 months into years.

Solution:

$$12\overline{)45}\ (3 \longrightarrow \text{Years}$$
$$\underline{-36}$$
$$9 \longrightarrow \text{Months}$$

Thus, 45 months = 3 years and 9 months

Exercise 9.1

Convert the following into seconds:

1. 39 minutes

Solution:

$$1 \text{ minute} = 60 \text{ seconds}$$
$$39 \text{ minutes} = (39 \times 60) \text{ seconds}$$
$$= 2340 \text{ seconds} \quad \textbf{Answer}$$

2. 257 minutes

Solution:

$$257 \text{ minutes} = (257 \times 60) \text{ seconds}$$
$$= 15,420 \text{ seconds} \quad \textbf{Answer}$$

3. 4 hours

Solution:

$$4 \text{ hours} = 60 \text{ seconds}$$
$$4 \text{ hours} = (4 \times 60) \text{ minutes} = (240 \times 60) \text{ seconds}$$
$$= 240 \text{ minutes} = 14400 \quad \textbf{Answer}$$

4. 15 hours and 52 minutes

Solution:

$$15 \text{ hours} = (15 \times 60) \text{ minutes}$$
$$= 900 \text{ minutes}$$
$$52 \text{ minutes} = (52 \times 60) \text{ seconds}$$
$$= 3120 \text{ seconds}$$
$$900 \text{ minutes} = (900 \times 60) \text{ seconds}$$
$$= 54,000 \text{ seconds}$$
$$15 \text{ hours } 52 \text{ minutes} = 57120 \text{ seconds} \quad \textbf{Answer}$$

5. 22 hours, 43 minutes and 37 seconds.

Solution:

$$22 \text{ hours} = (22 \times 60) \text{ minutes}$$
$$= 1320 \text{ minutes}$$
$$1320 \text{ minutes} = (1320 \times 60) \text{ seconds}$$
$$= 79,200 \text{ seconds}$$
$$43 \text{ minutes} = (43 \times 60) \text{ seconds}$$
$$= 2580 \text{ seconds}$$
$$79,200 + 2580 + 37 \text{ seconds}$$
$$= 81,817 \text{ seconds} \quad \textbf{Answer}$$

Convert the following into minutes.

1. 6 hours

Solution:

$$6 \text{ hours} = (6 \times 60) \text{ minutes}$$
$$= 360 \text{ minutes} \quad \textbf{Answer}$$

2. 7 hours and 25 minutes

Solution:

$$7 \text{ hours} = (7 \times 60) \text{ minutes}$$
$$= 420 \text{ minutes}$$
$$420 + 25 \text{ Minutes} = 445 \text{ minutes} \quad \textbf{Answer}$$

3. 12 hours and 20 minutes

Solution:

$$12 \text{ hours} = (12 \times 60) \text{ minutes}$$
$$= 720 \text{ minutes}$$
$$720 + 20 \text{ Minutes} = 740 \text{ minutes} \quad \textbf{Answer}$$

4. 23 days and 21 hours

Solution:

1 day	= 24 hours
23 day	= (23 x 24) hours
	= 552 hours
552 hours	= (552 x 60) minutes
	= 33120 minutes
21 hours	= (21 x 60) minutes
	= 1260 minutes
33120 + 1260	= 34380 minutes **Answer**

5. 39 days, 19 hours and 48 minutes.

Solution:

39 day	= (39 x 24) hours
	= 936 hours
936 hours	= (936 x 60) minutes
	= 56160 minutes
19 hours	= (19 x 60) minutes
	= 1140 minutes
56160 + 1140 + 48	= 5734 minutes **Answer**

Convert the following into hours:

1. 6 days

Solution:

1 day	= 24 hours
6 day	= (6 x 24) hours
	= 144 hours **Answer**

2. 88 days

Solution:

88 day	= (88 x 24) hours
	= 2112 hours **Answer**

3. 375 days

Solution:

375 day	= (375 x 24) hours
	= 9000 hours **Answer**

4. 7 weeks and 6 days

Solution:

1 week	= 7 days
7 week	= (7 x 7) days
	= 49 days
49 days	= (49 x 24) hours
	= 1176 hours
6 days	= (6 x 24) hours
	= 144 hours
1176 + 144	= 1320 hours **Answer**

5. 6 weeks, 5 days and 22 hours

Solution:

6 week	= (6 x 7) days
	= 42 days
42 days	= (42 x 24) hours
	= 1008 hours
5 days	= (5 x 24) hours
	= 120 hours
1008 + 120 + 22	= 1150 hours **Answer**

Convert the following into hours:

1. 120 seconds

Solution:

1 min	= 60 sec
$\frac{120}{60}$	= 2 min

2. 180 seconds

Solution:

1 min	= 60 sec
$\frac{180}{60}$	= 3 min

3. 290 seconds

Solution:

$$1 \text{ min} = 60 \text{ sec}$$

$$\frac{\cancel{290}}{\cancel{60}} = 4 \text{ min}$$

$$50 \text{ seconds}$$

5. 950 seconds

Solution:

$$1 \text{ min} = 60 \text{ sec}$$

$$\frac{\cancel{950}}{\cancel{60}} = 15 \text{ min}$$

$$50 \text{ seconds}$$

4. 785 seconds

Solution:

$$1 \text{ min} = 60 \text{ sec}$$

$$\frac{\cancel{785}}{\cancel{60}} = 13 \text{ min}$$
$$5 \text{ seconds}$$

Convert the following into hours:

1. 240 minutes

Solution:

$$1 \text{ hr} = 60 \text{ min}$$

$$\frac{\cancel{240}}{\cancel{60}} \text{ min} = 4 \text{ hours}$$

Answer

2. 360 minutes

Solution:

$$1 \text{ hr} = 60 \text{ min}$$

$$\frac{\cancel{360}}{\cancel{60}} \text{ min} = 6 \text{ hours}$$

Answer

3. 490 minutes

Solution:

$$1 \text{ hr} = 60 \text{ min}$$

$$\frac{\cancel{490}}{\cancel{60}} \text{ min} = 8 \text{ hours}$$
$$10 \text{ min}$$

Answer

4. 615 minutes

Solution:

$$1 \text{ hr} = 60 \text{ min}$$

$$\frac{\cancel{615}}{\cancel{60}} \text{ min} = 10 \text{ hours}$$
$$15 \text{ min}$$

Answer

5. 856 minutes

Solution:

$$1 \text{ hr} = 60 \text{ min}$$

$$\frac{\cancel{856}}{\cancel{60}} \text{ min} = 14 \text{ hr}$$
$$16 \text{ min}$$

Answer

Convert the following into days:

1. 480 hours

Solution:

$$1 \text{ day} = 24 \text{ hours}$$

$$1 \text{ hr} = \frac{1}{24} \text{ days}$$

$$480 \times 1 \text{ hours}$$

$$480 \times \frac{1}{24} \text{ day}$$

$$\frac{\cancel{480}}{\cancel{24}} \text{ day} = 20 \text{ days}$$

Answer

2. 240 hours

Solution:

$$24 \times \frac{1}{24} \text{ days}$$

$$\frac{\cancel{240}}{\cancel{24}} = \text{day} = 10 \text{ days}$$

Answer

3. 648 hours

Solution:

$$648 \times \frac{1}{24} \text{ days}$$

$$\frac{\cancel{648}}{\cancel{24}} = \text{day} = 27 \text{ days}$$

Answer

4. 888 hours

Solution:

$$888 \times \frac{1}{24} \text{ days}$$

$$\frac{\cancel{888}}{\cancel{24}} = \text{day} = 37 \text{ days}$$

Answer

5. 960 hours

Solution:

$$960 \times \frac{1}{24} \text{ days}$$

$$\frac{\cancel{960}}{\cancel{24}} = \text{day} = 40 \text{ days}$$

Answer

Convert the following into months:

1. 4 years

Solution:

$$1 \text{ years} = 12 \text{ months}$$
$$4 \text{ years} = (4 \times 12) \text{ months}$$
$$= 48 \text{ months}$$

Answer

2. 10 years

Solution:

$$10 \text{ years} = (10 \times 12) \text{ months}$$
$$= 120 \text{ months}$$

Answer

3. 18 years

Solution:

18 years = (18x12) months
= 216 months
Answer

5. 102 years.

Solution:

102 years = (102x12) months
= 1224 months
Answer

4. 52 years

Solution:

52 years = (52x12) months
= 624 months
Answer

Convert the following into years:

1. 24 months

Solution:

24 month = (24÷12) years
= 2 years
Answer

3. 55 months

Solution:

55 month = (55 ÷12) years
= 4 years 7 Months
Answer

5. 100 months

Solution:

100 month = (100÷12) years
= 8 years 4 Months
Answer

2. 48 months

Solution:

48 month = (48÷12) years
= 4 years
Answer

4. 61 months

Solution:

61 month = (61÷12) years
= 5 years 1 months
Answer

9.3

Look at the picture of the clock. How many hands the clock has? **2**

How many numbers are shown on clock? **12**

How many marks are between any two consecutive numbers? **5**

Count and tell how many points are there on the clock? **60**

We see that the dial of clock is divided into 60 equal parts.

Each part is denoted by a small mark called minute.

1 hour = 60 minutes

There are two hands in a clock. Or 1 degree = 60 munites

1. Long hand   **2. Short hand**

Long hand shows minutes. It takes one minute to move from one marks to another. It is called minute hand.

Short hand shows hours. It takes one hour to move from one number to another. Short hand is called hour hand.

In some clock there is also a third hand. It takes one second to move from one mark to another. This hand is called second hand.

9.4 ── **Telling Time in Minutes** ──

Example-1

Look at the picture of the clock. Minute had is at 2. Hour hand has slightly moved from 7. Minute hand has taken 10 minutes to move from 12 to 2.

Thus, it is 10 minutes past 7 o'clock.
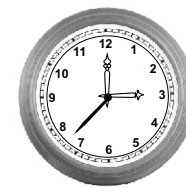
Example-2

Look at the picture of the clock. Minute hand is at 5. Hour hand is between 3 and 4. Minute hand takes 25 minutes to move from 12 to 5.

Thus, time now is 25 minutes past 3.

Example-3

Look at the picture of the clock. Hour hand is near 2. Minute hand is at 9. We also know that minute hand takes 45 minutes to reach 9 (from 12). Therefore, the time in the clock is: minutes past 1.

Example-4

Look at the picture of the digital watch. We note that the number 11 is on the left side of dots ":" and the number 58 is on the right side of the dots ":". It means the time now is: 58 minutes past 11 o'clock.

Exercise 9.2

A. What time does the each clock show, write in the box.
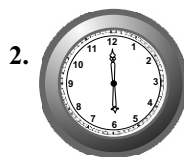
1. 4:00   **2.** 6:00   **3.** 8:30   **4.** 3:30

B. What time does each of the following clocks show:

1.
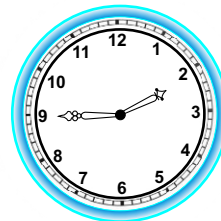
It is _____ minutes past _____

2.
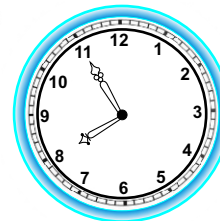
It is _____ minutes past _____

3.
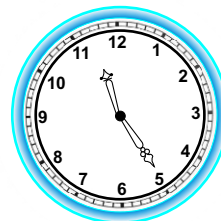
It is _____ minutes past _____

4.
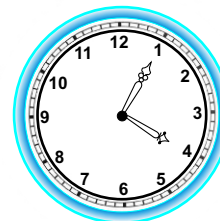
It is _____ minutes past _____

5.
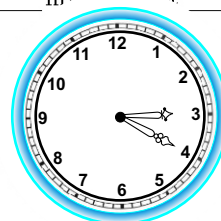
It is _____ minutes past _____

6.
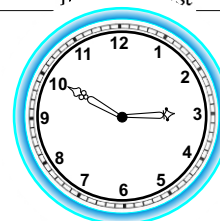
It is _____ minutes past _____

7.
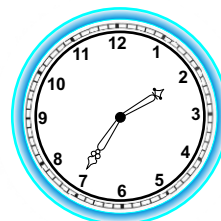
It is _____ minutes past _____

8.
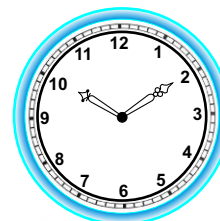
It is _____ minutes past _____

9.5 Reading and Telling Day and date of a particular month from the Lunar and solar calendars

We have already learnt in previous class about the number of months and their names in Lunar and Solar calendar year. Lunar year is also called an Islamic year. Every month of Lunar calendar starts from the night of the new cresent. Each month consists of 29 or 30 days depending upon the appearance of the moon.

Following are the months of Lunar Calendar.

1. Muharram	5. Jamadi-ul-awwal	9. Ramazan
2. Safar	6. Jamadi-us-sani	10. Shawwal
3. Rabi-ul-awwal	7. Rajab	11. Ziqaad
4. Rabi-us-sani	8. Shaban	12. Zilhaj

In Solar calendar there are 365 days in a years. A year which is exactly divisible by 4 is called a Leap year. For example 2000, 2004, 2008, etc are leap years. A leap year has 366 days. The month of February in a leap year is of 29 days.

Let us now learn to read and tell the day and date of a particular month from the Lunar and Solar calendar. Here the days and the months of both Solar and Lunar year are given in the same one calendar.

Look at the given calendar, the dates of Solar calendar are given in a large point size. The dates of Islamic year are given in a small point size.

ACTIVITY

Look at the calendar. Tell the date, month and the day of a week for our independence day in both the calendars.

Particular Day	Day	Solar Calendar		Lunar Calendar	
		Date	Month	Date	Month
Independence Day					

Calendar 2009 (1429 - 1430)

(Each cell shows Solar date / Lunar date)

January — Muharram / Safar

Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1/3	2/4	3/5
4/6	5/7	6/8	7/9	8/10	9/11	10/12
11/13	12/14	13/15	14/16	15/17	16/18	17/19
18/20	19/21	20/22	21/23	22/24	23/25	24/26
25/27	26/28	27/29	28/1	29/2	30/3	31/4

February — Safar / Rabi-ul-Awwal

Sun	Mon	Tue	Wed	Thu	Fri	Sat
1/5	2/6	3/7	4/8	5/9	6/10	7/11
8/12	9/13	10/14	11/15	12/16	13/17	14/18
15/19	16/20	17/21	18/22	19/23	20/24	21/25
22/26	23/27	24/28	25/29	26/30	27/1	28/2

March — Rabi-ul-Awwal / Rabi-us-Sani

Sun	Mon	Tue	Wed	Thu	Fri	Sat
1/3	2/4	3/5	4/6	5/7	6/8	7/9
8/10	9/11	10/12	11/13	12/14	13/15	14/16
15/17	16/18	17/19	18/20	19/21	20/22	21/23
22/24	23/25	24/26	25/27	26/28	27/29	28/1
29/2	30/3	31/4				

April — Rabi-us-Sani / Jamadi-ul-Awwal

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1/5	2/6	3/7	4/8
5/9	6/10	7/11	8/12	9/13	10/14	11/15
12/16	13/17	14/18	15/19	16/20	17/21	18/22
19/23	20/24	21/25	22/26	23/27	24/28	25/29
26/1	27/2	28/3	29/4	30/5		

May — Jamadi-ul-Awwal / Jamadi-us-Sani

Sun	Mon	Tue	Wed	Thu	Fri	Sat
31/6					1/6	2/7
3/8	4/9	5/10	6/11	7/12	8/13	9/14
10/15	11/16	12/17	13/18	14/19	15/20	16/21
17/22	18/23	19/24	20/25	21/26	22/27	23/28
24/29	25/30	26/1	27/2	28/3	29/4	30/5

June — Jamadi-us-Sani / Rajab

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	1/7	2/8	3/9	4/10	5/11	6/12
7/13	8/14	9/15	10/16	11/17	12/18	13/19
14/20	15/21	16/22	17/23	18/24	19/25	20/26
21/27	22/28	23/29	24/1	25/2	26/3	27/4
28/5	29/6	30/7				

July — Muharram / Safar

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1/8	2/9	3/10	4/11
5/12	6/13	7/14	8/15	9/16	10/17	11/18
12/19	13/20	14/21	15/22	16/23	17/24	18/25
19/26	20/27	21/28	22/29	23/30	24/1	25/2
26/3	27/4	28/5	29/6	30/7	31/8	

August — Shaban / Ramzan

Sun	Mon	Tue	Wed	Thu	Fri	Sat
30/9	31/10					1/9
2/10	3/11	4/12	5/13	6/14	7/15	8/16
9/17	10/18	11/19	12/20	13/21	14/22	15/23
16/24	17/25	18/26	19/27	20/28	21/29	22/1
23/2	24/3	25/4	26/5	27/6	28/7	29/8

September — Ramzan / Shawwal

Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1/11	2/12	3/13	4/14	5/15
6/16	7/17	8/18	9/19	10/20	11/21	12/22
13/23	14/24	15/25	16/26	17/27	18/28	19/29
20/30	21/1	22/2	23/3	24/4	25/5	26/6
27/7	28/8	29/9	30/10			

October — Shawwal / Ziqaad

Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1/11	2/12	3/13
4/14	5/15	6/16	7/17	8/18	9/19	10/20
11/21	12/22	13/23	14/24	15/25	16/26	17/27
18/28	19/29	20/1	21/2	22/3	23/4	24/5
25/6	26/7	27/8	28/9	29/10	30/11	31/12

November — Ziqaad / ZilHaj

Sun	Mon	Tue	Wed	Thu	Fri	Sat
1/13	2/14	3/15	4/16	5/17	6/18	7/19
8/20	9/21	10/22	11/23	12/24	13/25	14/26
15/27	16/28	17/29	18/30	19/1	20/2	21/3
22/4	23/5	24/6	25/7	26/8	27/9	28/10
29/11	30/12					

December — ZilHaj / Muharram

Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1/13	2/14	3/15	4/16	5/17
6/18	7/19	8/20	9/21	10/22	11/23	12/24
13/25	14/26	15/27	16/28	17/29	18/1	19/2
20/3	21/4	22/5	23/6	24/7	25/8	26/9
27/10	28/11	29/12	30/13	31/14		

Exercise 9.3

Look at the Calendar and answer the following questions:

Q: 1. Which day is on 12th Rabi-ul-Awwal also tell the date and month of the Solar calendar?

Ans: 2th Rabi-ul-Awwal is on 08-02-2009.

Q:2. Which day is on 23rd March also tell the date and month of the Lunar calendar?

Ans: 23rd March is on 25 Rabi-ul-Awwal, Rabi-ul-Sani.

Q:3. Which day is on 25th December also tell the date and month of the Lunar calendar?

Ans: 25th December is on 8 Zilhaj, Muharram.

Q:4. Which day is on first Ramazan?

Ans: 1st Ramazan is on 22 August.

Q:5. Tell the dates for Fridays in the month of Shawwal?

Ans: 25, 2, 9, 16.

Q:6. Which day is on 1st Muharram? Also tell the date and month of Solar calendar.

Ans: 1st Muharam is on 18th December.

Q:7. What is the date, day and month of your birth day in both the calendars?

Ans: _____

Q:8. Tell the name of month having 29 days.

Ans: February.

Q:9. Tell the date and day in both solar and lunar years for the following:

(i) Eid-ul-Fitar
=   Solar calendar = 21th date, Manday.
=   Lunar calender = 1st Shawwal.

(ii) Eid-ul-Azha
=   Solar calendar =
=   Lunar calender =

(iii) 10th of Muharram
=   Solar calendar =
=   Lunar calender =

(iv) Shab-e-Barat
=   Solar calendar =
=   Lunar calender =

(v) Pakistan's Day
=   Solar calendar =
=   Lunar calender =

(vi) Labour Day
=   Solar calendar =
=   Lunar calender =

(vii) Independence Day
=   Solar calendar = 14th August Friday.
=   Lunar calender = 22 Shaban.

Q:10. How many months have five Fridays?

Ans: January, May, July, October.

Q:11. On which date is Hajj performed in Lunar year. Tell also its date in Solar year and its day?

Ans: _____.

9.6 — Addition and Subtraction of Units of Time —

Example-1 Add 5 hours, 30 minutes and 15 seconds to 3 hours, 45 minutes and 55 seconds.

Solution:

	Hours	Minutes	Seconds
	1	**1**	
	5	30	15
+	3	45	55
	9	16	10

Explanation

Addition of seconds:
(15+55) seconds = 70 seconds
=1 minute 10 seconds.
Addition of minutes:
(1+30+45) minutes = 76 minutes
= 1 hour 16 minutes.
Addition of hours:
(1+5+3) hours = 9 hours.

Thus, the sum is 9 hours, 16 minutes and 10 seconds.

Example-2 Add 2 weeks, 4 days, 20 hours and 35 minutes to 5 weeks, 6 days, 18 hours and 56 minutes.

Solution:

	Weeks	Days	Hours	Minutes
	1	**1**	**1**	
	2	4	20	35
+	5	6	18	56
	8	4	15	31

Explanation

Addition of minutes:
(35+56) minutes = 91 minutesseconds
=1 hours 31 minutes.
Addition of hours:
(1+20+18) hours = 39 hours
= 1 day 15 hours.
Addition of days:
(1+4+6) days = 11 days. hours.
= 1 week 4 days.
Addition of weeks:
(1+2+5) weeks = 8 weeks.

Thus, the sum is 8 weeks, 4 days, 15 hours and 31 minutes.

Example-3 Subtract 8 hours, 45 minutes and 59 seconds from 10 hours, 27 minutes and 57 seconds.

Solution:

	Hours	Minutes	Seconds
	9	**26**	**117**
	10	27	57
-	8	45	59
	1	41	58

Explanation

Subtraction of seconds:
(57+60) seconds = 117 seconds
where we borrow 1 minute from 27 minutes.
(1 minute = 60 seconds).
117 - 59 = 58
Subtraction of minutes:
Similarly, (60+26) minutes
= 86 minutes where we borrow
1 hour from 10 hours:
86 - 45 = 41
Subtraction of hours:
9 - 8 = 1 hour

Thus, the difference is 1 hour, 41 minutes and 58 Seconds.

Exercise 9.4

Add:

1.

Hours	Minutes	Seconds
4	22	11
+ 3	33	33
7h	55 min	44 sec

2.

Hours	Minutes	Seconds
12	48	59
+15	30	37
28 h	19 min	36 sec

3.

Hours	Minutes	Seconds
4	15	40
+ 5	15	50
10 days 7 h	30 min	

4.

Hours	Minutes	Seconds
12	6	19
+23	5	21
35 days 11 h	40 min	

5.

Weeks	Days	Hours	Minutes	Seconds
2	5	23	29	27
+ 15	6	17	53	48
18 weeks	5days	17h	23 min	15 min

6.

Hours	Minutes	Seconds
5	44	22
- 4	33	11
1 h	11min	11sec

7.

Hours	Minutes	Seconds
12	35	25
- 8	36	45
3 h	58 min	40sec

8.

Days	Hours	Minutes
10	5	37
- 5	9	48
4days	19h	49min

9.

Weeks	Days	Hours
17	5	15
- 12	6	23
3 h	58 min	40sec

10.

Weeks	Days	Hours	Minutes	Seconds
15	3	19	39	49
- 8	6	23	49	59
6 weeks	3days	19 h	49 min	50 sec

9.7 World Problems:

Example-1

Nausheen woke up at 7-15. She had to be in school at 8-30. How much time did she have from getting up to reach the school?

Solution:

Hours	-	Minutes
8	-	30
- 7	-	15
1		15	= 1 hour 15 minutes.

Example-2

A programme starts at 4-15 and lasts 1 hour 20 minutes. What is the time when it ends?

Solution:

	Hours	-	Minutes
The function starts at	4	-	15
and lasts	+ 1	-	20
Hence, it ends at 5 - 35	5	-	35

Example-3

A father is 42 years 3 month old and his son is 18 years 9 months old. How much older is the father than son?

Solution:

	Years	-	Months
Age of father	42	-	3
Age of his son	- 18	-	9
Hence, father is 23 years 6 months	23	-	6
older than his son.			

> **Explanation**
>
> We cannot subtract 9 from 3. We borrow 1 year from 42 years and add 1 year = 12 months to 3 months, i.e 15. Now 15 - 9 = 6 months.

Exercise 9.5

1. A cartoon program starts at 5 past3 and ends at 20 past 3. How long was the program?

Hours	Minutes
3	20
- 3	5
0	15 min

= 15 min

2. The time now is10:15. What time will be 25 minutes from now?

= 10 , 40 Answer

3. A businessman stayed 3 weeks 5 days in Lahore, 2 weeks 6 days in Rawalpindi and 2 weeks 4 days in Karachi. How long did he stay at three places?

Weeks	Days
3	5
2	6
- 2	4
7	15 days

= 9 weeks 1 day Answer

4. Bilal is 44 years 4 months old and his daughter is 15 years 9 months old. Find the difference between their ages?

Year's	Month's
44	4
- 15	9
28	7 days

= 28 years 7 months Answer

5. Gul Banoo takes 6 hours 20 minutes to make two dresses. If she makes one in 3 hours 15 minutes. How long does she take to make the other dress?

Year's	Month's
6	20
- 3	15
3	5 days

= 3 hours 5 minutes Answer

6. It began to rain at 2:30 yesterday. It rained for 1 hour 40 minutes. When did the rain shop?

= 4 : 10 Answer

CHAPTER NO.10

GEOMETRY

10.1 — INTRODUCTION

Geometry is a Greek word. "Geo" means "Earth" and "Metry" means "measurement". Thus geometry means measurement of earth.

In this chapter we shall study the following:

Point, Line segment, ray, line, Triangle, Rectangle, Square and Circle.

10.2 — Point

We mark a few dots on the sheet of paper.
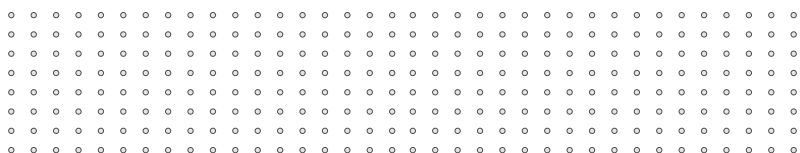
Each one of these dots shows a POINT. We lable (name) each point for the sake of convenience, so that we cna find its location (address). The points are labeled by capital letters A, B, C, ...X, Y, Z of the roman Alphabet (Which is also used in English)

Please note that like numbers, the points are albstract and it is not possible to show them. What can be shown are images (pictures) of various points. Thus the dots shown above are "images of points" but for the sake of convenience we will call them "POINTS".

We are showing below some images of points:

B

C

A

D
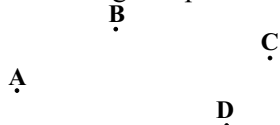
We shall read them as "point A", "point B", "point C", "Point D", please note that the labels A, B, C, D may be written above or below or on the left or on the right of the points.

10.3 — Line Segment, Ray, Straight Line

We mark two points A and B on the sheet of paper.

Let us join them with the help of a ruler.

A —————————— B

What we get is the image (picture) of a LINE SEGMENT.

We read it as "line segment AB".

We can also read it as "line segment BA".

Similarly:

D   C   Y

C   A

X

CD, AC, XY are also images of line segments. For the sake of convenience we read them as:

Line segment CD,
Line segment AC,
Line segment XY

We can also drop the word "line" and call them as:

Segment CD, segment AC, segment XY,

They can also be called segment DC, segment CA, segment YX,

In the segment AB the points A and B are its END POINTS.
In the segment CD the points C and D are its END POINTS.
In the segment AC the points A and C are its END POINTS.
In the segment XY the points X and Y are its END POINTS.

10.4 — Shortest Path

Take a string or thread and measure different paths shown in the picture for going from point A to Point B. You will note that the shortest path between the points A and B is the path shown by blue colour. The red coloured path shows the line segment AB. It should be remembered that the segment AB is the shortest path between its end points A and B.

The red path is STRIGHT path whereas all the other paths are CURVED paths. A curved path is called a curve.

(a)   If you look at your class room. you will see a line segment

   (1)   Where two walls meet.

   (2)   Where a wall and the floor meet.

   (3)   Where a wall and the ceiling meet.

   (4)   Where a wall and the ceiling meet.

(b)   Straight edges of a table are also examples of line segments.

X —————————————————————→ **Y**
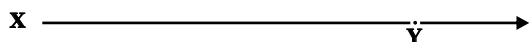
Now look around and locate various line segments.

Ray

The following picture is the image of a RAY.

We read it as ray XY. We can not read it as ray YX. X is the END POINT of this ray. Y is just any point on the image of the ray. The arrow head on the right shows that on this side the image of the ray is endless. Thus it is impossible to draw complete image of a ray.
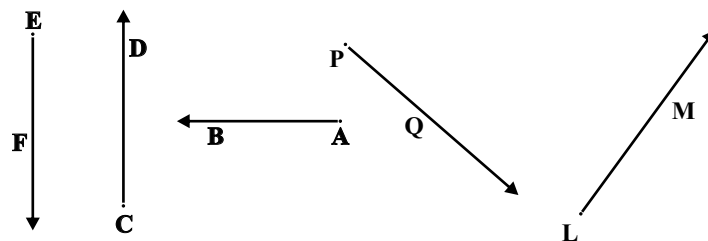
The above pictures show images of five rays. They are read as ray EF, ray CD, ray AB, ray PQ, ray LM. please remember that in reading or writing the name of a ray, its end point must be mentioned first.

Straight Line

The picture below is the image of STRAIGHT LINE

←————————— **A** ——————— **B** ————→
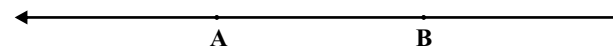
We read it as straight line AB. We may be also read it as straight line BA. A and B are any two points on the image of the line AB. The arrow heads show that in both the directions the image of the straight line is endless thus it is impossible to draw complete image of a straight line. A straight line has NO end point.
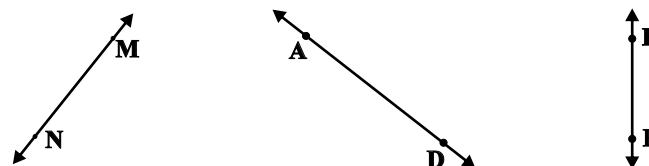
These above pictures show images of three straight lines. They are straight line NM. Straight line DA, straight line BP. We may drop the word "straight" and call them line NM, line DA, line BP.

Remember: To construct a line segment, mark any two points on the paper and join them with a ruler.

Intersecting Lines And Parallel Lines:

In the opposite picture line AB and line CD cut each other in this picture the given lines AB and CD are INTERSECTING LINES. The point E is their POINT OF INTERSECTION.
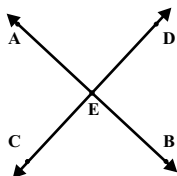
In the opposite picture XY and LM are intersecting lines. P is their point of intersection.
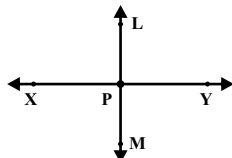
In the picture given below the pair of lines shown are PARALLEL lines.
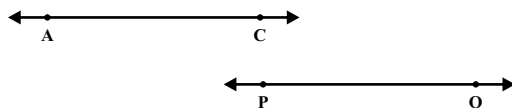
Please note that the lines AC and PQ do not intersect. Two lines are said to be PARALLEL if they do not intersect.

The pairs of lines, segments and rays shown in the following picture are parallel.
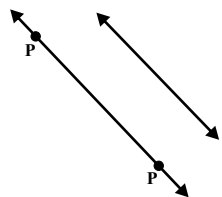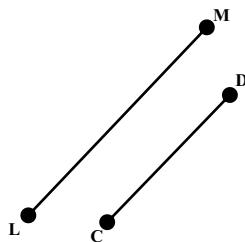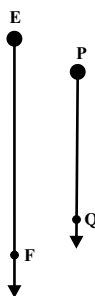
Picture 1   Picture 2   Picture 3

In picture 1, lines AB and XY are parallel.

In picture 2, segment CD and LM are parallel.

In picture 3, rays PQ and EF are parallel.

Take a pair of points on a sheet of paper join them with the help of a ruler and name the segment so obtained. Also write its end points.
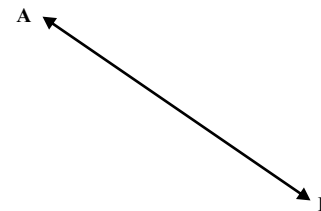
AB is a line segment.

A and B are its end points.

Exercise 10.1

A. **(1)** In the pictures given below point out the images of segments, rays and lines. For segments and rays write their end.

(1) A ——————— B

    Solution

= Segments AB

(2)

    Solution

= Segments CD

(3)

    Solution

= Segments EF

(4)

    A •——————• B

    Solution

= Segments AB

(5)

C

D

Solution

= Segments CD

(6)

F

E

Solution

= Segments EF

(7)

Q

P

Solution

= Ray PQ

(8)

Z

Y

Solution

= Line YZ
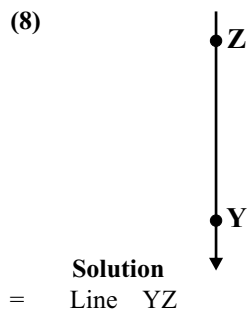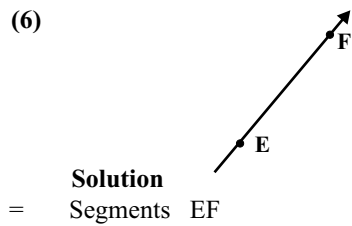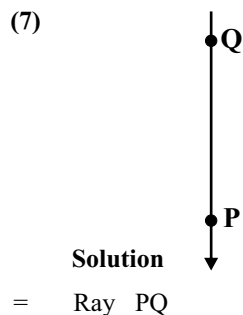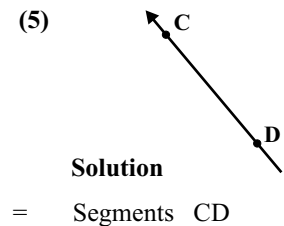
B. In the pictures given below point out which pairs show intersecting lines or intersecting segments or intersecting rays and which pairs show parallel segments.

(1)

D

A ——————— B

C

Solution

Intersecting segments

(2)

F H

G

E

Solution

Parallel segments

(3)

L

J

I

K

Solution

Parallel segments

(4)

R

O ——————— P

Solution

Intersecting segments Q

(5)

P

L M

Solution

Intersecting segments

(6)

P Q

R S

Solution

Parallel Rays

(7)

V Y

U X

Solution

Parallel segments

(8)

D B

C E

Solution

Intersecting segments

(9)

S M

I

N

Solution

Intersecting segments

(10)

J X

K Y

Solution

Parallel Lines

(11)

B D

A C

Solution

Intersecting Lines

(12)

P

O M

Solution

Intersecting Lines

10.5 — Triangle

The opposite picture shows a TRIANGLE. We all it triangle ABC. We can also call it triangle ACB or triangle BCA etc.
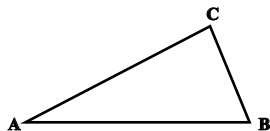
Triangle ABC consists of three line segments. (you ma say that triangle ABC has three line segments but the word "consists" is more mathematical). They are segment AB, segment BC, segment AC. A segment of a triangle is called a SIDE.

The side AB and AC intersect at point A.

The sides AB and BC intersect at pont B.

The sides AC and BC intersect at point C.

A triangle has three sides:

The point A, B, C, are the vertices of the triangle ABC. Please note that singular of the word "vertices" is "Vertex".

A triangle has three vertices:

Example

Write names of the triangles shown in the pictures 1, 2, and 3. Also write names of their sides and vertices.
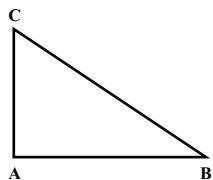
Picture 1
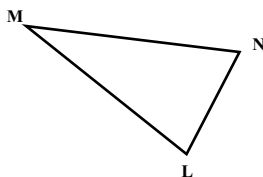
Picture 2
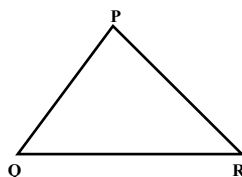
Picture 3

Picture-1: Triangle ABC. Its sides are AC, AB, BC. Its vertices are A, B,

Picture-2: Triangle L N M. Its sides are ML, LN, NM. Its vertices are L, M, N.

Picture-3: Triangle PQR. Its sides are PQ, PR, QR. Its vertices are P.Q

To construct a triangle take any three points on a sheet of paper and draw line segments as shown in the following picture.

Triangle XYZ, has been constructed.
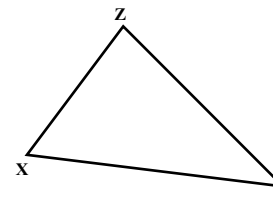
Please note that all three points must not be on the same straight line.

10.6 — Rectangle

The opposite picture shows a RECTANGLE. We call it rectangle ABCD. We may also call it rectangle ADCB or rectangle BCDA etc. But we can NOT call it rectangle ACBD or rectangle BDAC etc.
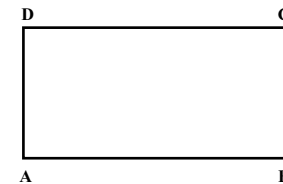
Rectangle ABCD consists of four segments. They are segment AB, segment BC, segment CD, segment AD.

A segment of a rectangle is called a SIDE.

The sides A B and AD intersect at point A.

The sides A B and BC intersect at point B.

The sides BC and DC intersect at point C.

The sides A D and CD intersect at point D.

The points A, B, C, D are the vertices of the rectangle ABCD. A rectangle has four vertices and four sides.

The sides AB and CD are OPPOSITE sides of this rectangle.

The sides AD and BD are OPPOSITE sides of this rectangle.

The sides AB and AD are ADJACENT sides of this rectangle.

The sides BC and CD are ADJACENT sides of this rectangle.

The sides AB and DC do not intersect. They are parallel.

The sides AD and BC do not intersect. They are parallel.

Now see the opposite picture of the rectangle PQRS. Its sides are PQ QR, RS and SP.

The segments PR and QS are not its sides. They are the DIAGONALS of the rectangle PQRS. A rectangle has two diagonals.
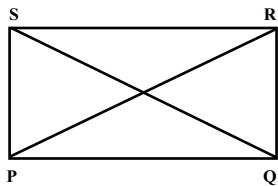
10.7 — Square

A SQUARE is a special type of rectangle, whose all four sides are equal in length. All properties of rectangles are, therefore, true for squares.

10.8 — Circle

The opposite picture shows a CIRCLE. The point C is the CENTRE of the circle. The segment CA is RADIUS of the circle.
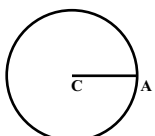
We read it as circle with centre C and radius CA. Please note that the point C is not on the circle. This point is in the interior of the circle.
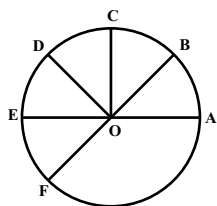
Now look at the opposite picture of a circle. The point O is its centre. The segments OA, OB, OC, OD, OE, OF are radii (plural of radius) of the circle.

Measure lengths of these radii with the help of a ruler or a thread. You will note that the length of all these radii is the same.
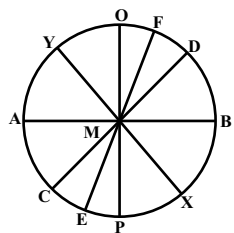
In the opposite picture of a circle, the point M is its centre. The segment AB is a DIAMETER of this circle. The segment CD, EF, PQ, XY are also diameters of this circle.

Exercise 10.2

A. Write names of the triangles given below. Also write names of their sides and vertices.

(1)
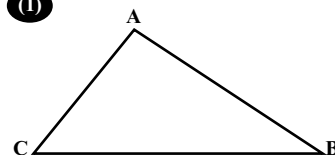
Solution
Sides are AB, BC, AC
Natation are A , B , C

(2)
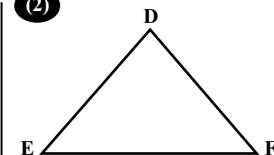
Solution
Sides are LM, MM, NL
vertices L , M , N

(3)
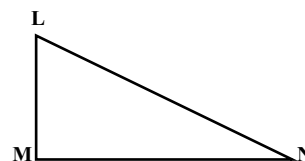
Solution
Sides are XY, YW, YW
vertices are X , Y , W

(4)
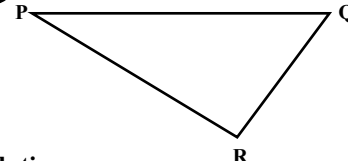
Solution
Sides are DE, EF, DF
vertices D , E , F

(5)
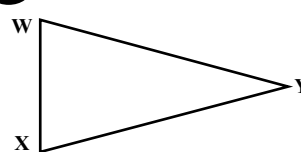
Solution
Sides are PQ, QR, PR
vertices are P , Q , R

(5)
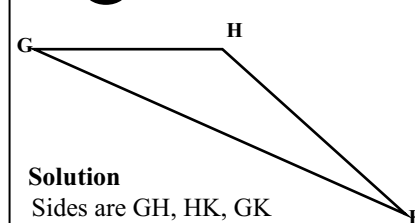
Solution
Sides are GH, HK, GK
vertices G , H , K

B. Write names of the rectangles given below. Also write names of their vertices, sides and diagonals.

(1)
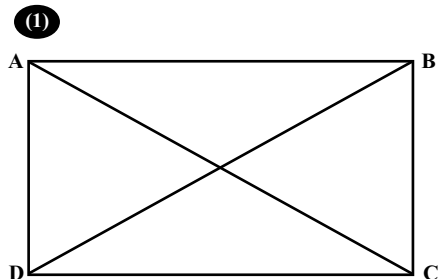
Solution
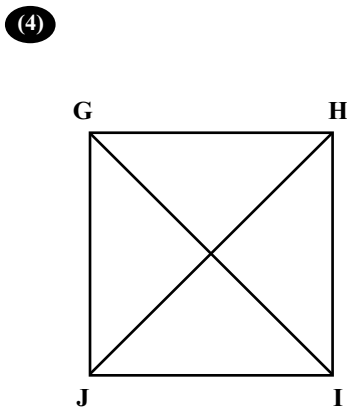Sides are AB, BC, CD, DA
Vertices are A , B , C , D
Diagonals are AD, BC

(2)
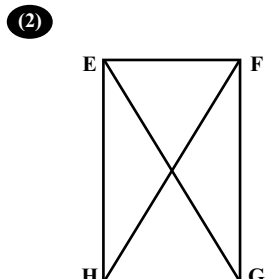
Solution
Sides are EF, FG, GH, GE
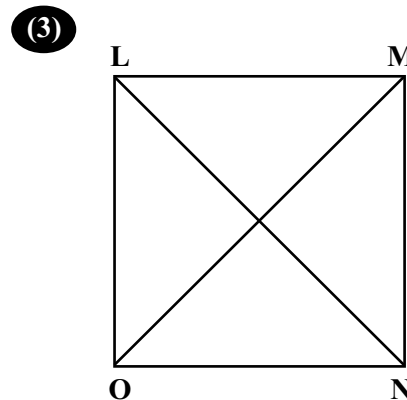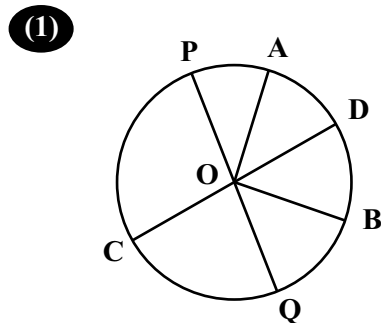Vertices are E , F , G , H
Diagonals are EH , FG

(3)
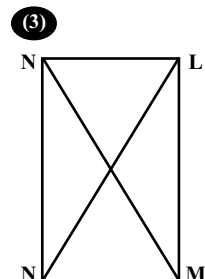
Solution
Sides are KL , LN, NM, MK
Vertices are K , L , M , N
Diagonals are KM , LN

(4)
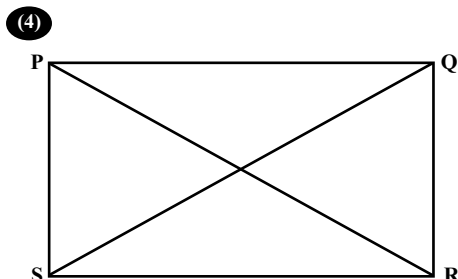
Solution
Sides are PQ, QS, SR, RP
Vertices are P , Q, R, S
Diagonals are PR, QS

C. In the following rectangles, measure the sides and diagonals and write the names of sides whose length are equal or unequal. Are the diagonals of each rectangle equal in measure? Point out the parallel and adjacent sides of each rectangle.

(1)
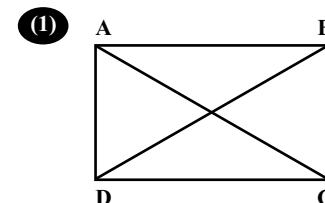
Solution
Sides are A , B , C , D
Sides are Ab , BC , CD , AC
Vertices are A , B , C , D
Diagonals are AC, BD

(2)
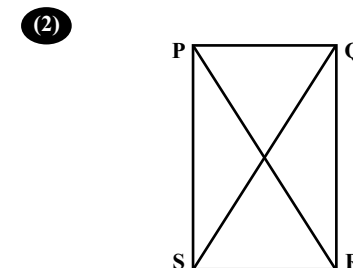
Solution
Sides are P , Q , R , S
Sides are PQ, Qr, RS, PR
Vertices are P, Q, R, S
Diagonals are PR, QS

(3)
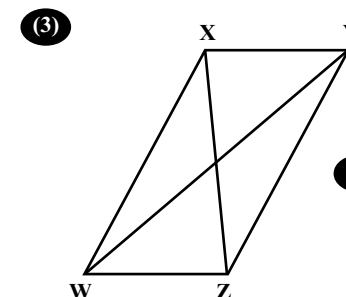
Solution
Sides are W, X, Y, Z
Sides are WX, XY, YZ, YZ
Vertices are W, X, Y, Z
Diagonals are XZ, YW

(3)
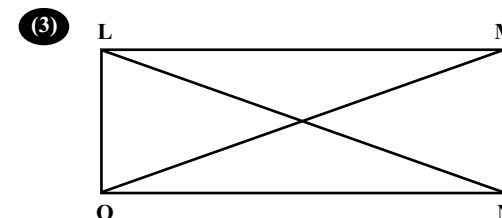
Solution
Sides are L, M, N, O
Sides are LM, MN, NO, LO
Vertices are L, M, N, O
Diagonals are LO, MN

D. Write names of the squares given below. Also write names of their vertices, sides and diagonals..

(1)

(2)
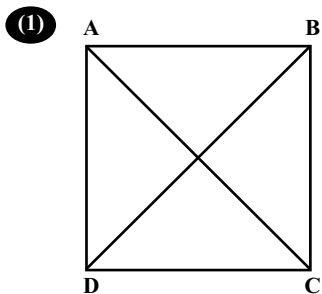
Solution
Sides are Ab , BC , CD , AC
Vertices are A , B , C , D
Diagonals are AD, BC
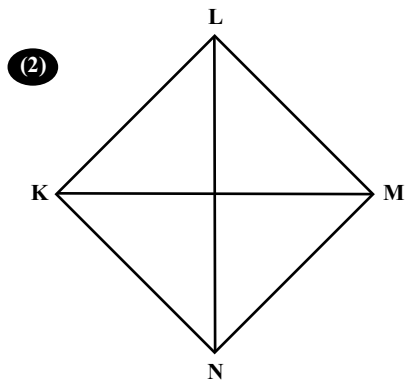
Solution
Sides are KL, LM, MN, AN
Vertices are K, L, M, N
Diagonals are LN, KM

(3)

(4)
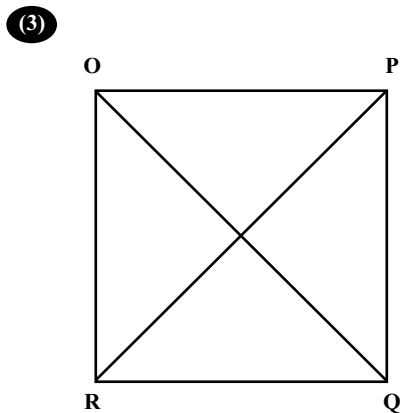
Solution
Sides are SP, PR, RQ, SQ
Vertices are P, Q, R, S
Diagonals are SQ, PR

Solution
Sides are GH, HJ, JI, GI
Vertices are G, H, I, J
Diagonals are GI, HJ

E. In the following squares, measure the sides and diagonals. Are all the sides equal in measure? Are both the diagonals equal in measure?

(1)

(2)
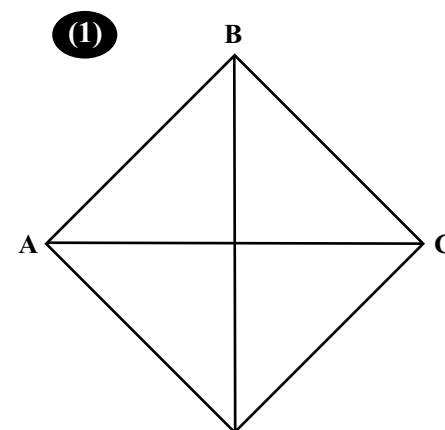
Solution
Sides are A B C D
Vertices are Ab , BC , CD , AD
Diagonals are AC, BD

Solution
Sides are E F G H
Vertices are EF, FG, GH, EH
Diagonals are EG, FH

(3)

(4)

Solution
Sides are L M N O
Vertices are LM, MN, NO, LO
Diagonals are LN, MO
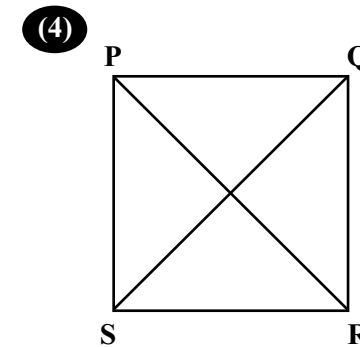
Solution
Sides are O Q R S
Vertices are PQ, QR, RS, PS
Diagonals are PR, QS

F. In the following circle write the name of the centre of each circle.
For every circle write names of given radii and diameters.

(1)

(2)

Solution
Sides are O
Vertices are OB, OD, OA, OP, OC, OQ
Diagonals are PQ, AB, CD
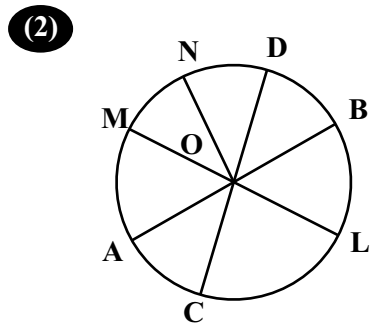
Solution
Sides are O
Vertices are OL, OB, OD, ON, OM, OA, OC
Diagonals are AB, CD, LM, NO

(1)

(2)
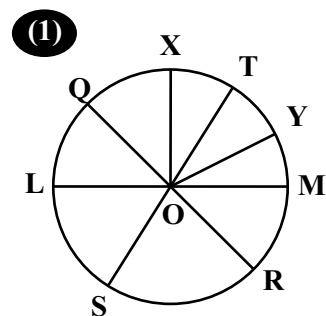
Solution
Sides are O
Vertices are OR, OM, OY, OY, OX, OQ, OT, OS
Diagonals are LM, QR, TS, OX, OY

Solution
Sides are O
Vertices are OF, OE, OB, OD, OM, OG, OA, OC, OL
Diagonals are AB, CD, LM, FO, FG

10.9 — PERIMETER

1.   Perimeter

We know that every closed figure has a boundary. The measurement of the boundary is called perimetre.

Thus the perimeter of any closed figure is the sum of the measurements of all its sides.

Example-1 Find the perimeter of the given triangle. The measure of its sides are 5cm, 8cm, and 4cm.
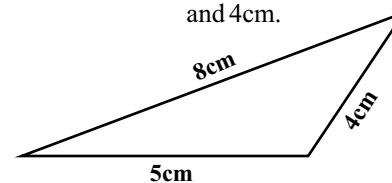
Solution: =   Sum of the measurement Perimeter of the triangle of all its sides

=   5 cm + 8cm + 4cm

=   17 cm.

Example-2 Find the perimeter of the given Quadrilateral. The measure of its sides are 7cm, 5,6cm, and 9cm.
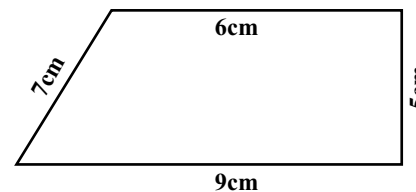
Solution:

Perimeter of the quadrilateral	=	Sum of the measures of all its sides.
	=	9 cm + 7cm + 6cm + 5cm
	=	27 cm.

Example-3

Find the perimeter of a given rectangle. The measures of its sides are 6cm, 4cm 6cm, 4cm.

6cm

4cm ⬜ **4cm**

6cm
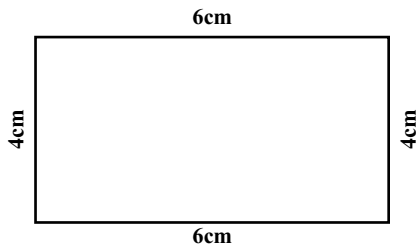
Solution:

Perimeter of the rectangle	=	Sum of the measures of all its sides.
	=	6 cm + 4cm + 6cm + 4cm
	=	20 cm.

Example-4

Find the perimeter of a given square. The measurement of one of its sides is 7cm.

7cm

7cm ⬜ **7cm**

7cm
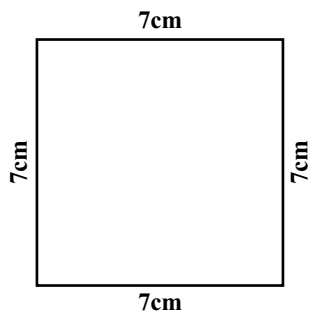
Solution:

Perimeter of the square	=	Sum of the measures of all its sides.
	=	7 cm + 7cm + 7cm + 7cm
	=	28 cm.

Example-5

Find the perimeter of a given triangle. The measures of its sides are 10cm, 8cm, and 6cm,

6cm **10cm**

8cm
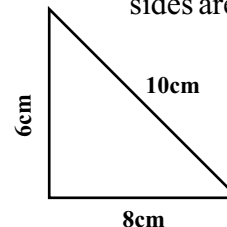
Solution:

Perimeter of the triangle

	=	Sum of the measures of all its sides.
	=	10cm + 8cm + 6cm
	=	24 cm.

Exercise 10.3

A. Find the perimeter of the following shapes. (All the measures are in cm.).

(1)

5cm △ **5cm**

5cm

(2)

4cm ◺ **3cm**

5cm
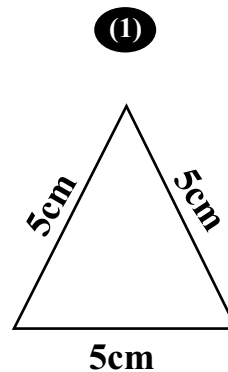
Solution:

Perimeter of the triangle
= Sum of the measures of all its sides.
= 5cm + 5cm + 5cm
= 15 cm.
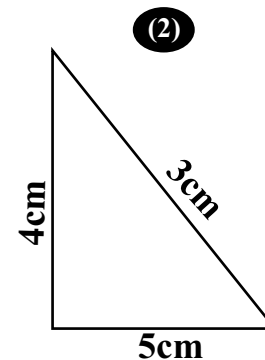
Solution:

Perimeter of the triangle
= Sum of the measures of all its sides.
= 3cm + 4cm + 5cm
= 12 cm.

(3)

6cm
5cm   5cm
3cm
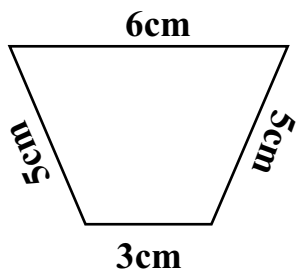
Solution:
Perimeter of the triangle
= Sum of the measures of all its sides.
= 5cm + 5cm + 6cm + 3cm
= 19 cm.

(4)

4cm
3cm   3cm
4cm
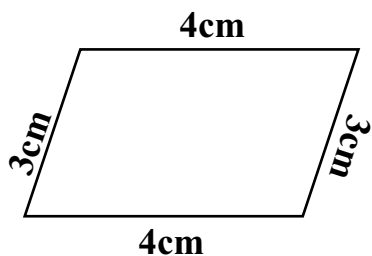
Solution:
Perimeter of the triangle
= Sum of the measures of all its sides.
= 4cm + 4cm + 3cm + 3cm
= 14 cm.

(5)
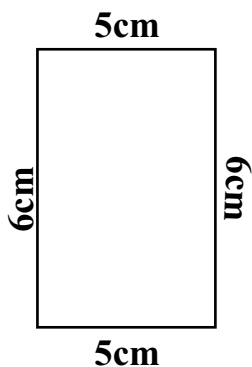
5cm
6cm   6cm
5cm

Solution:
Perimeter of the triangle
= Sum of the measures of all its sides.
= 5cm + 5cm + 6cm + 6cm
= 22 cm.

(6)

5cm
3cm   3cm
5cm
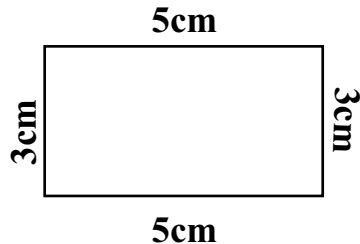
Solution:
Perimeter of the triangle
= Sum of the measures of all its sides.
= 5cm + 5cm + 6cm + 6cm
= 22 cm.

(7)

6cm
4cm   4cm
6cm
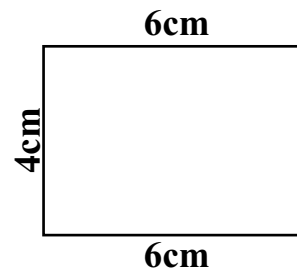
Solution:
Perimeter of the triangle
= Sum of the measures of all its sides.
= 4cm + 4cm + 6cm + 6cm
= 20 cm.

(7)

7cm
3cm   3cm
7cm
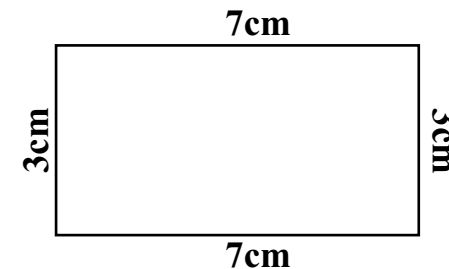
Solution:
Perimeter of the triangle
= Sum of the measures of all its sides.
= 7cm + 7cm + 3cm + 3cm
= 20 cm.

(9)

3cm
6cm   6cm
3cm
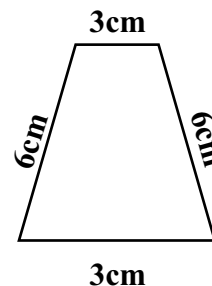
Solution:
Perimeter of the triangle
= Sum of the measures of all its sides.
= 6cm + 6cm + 3cm + 3cm
= 18 cm.

(10)

8cm
6cm   7cm
5cm
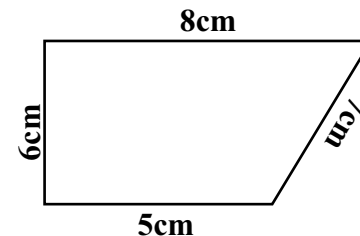
Solution:
Perimeter of the triangle
= Sum of the measures of all its sides.
= 8cm + 5cm + 6cm + 7cm
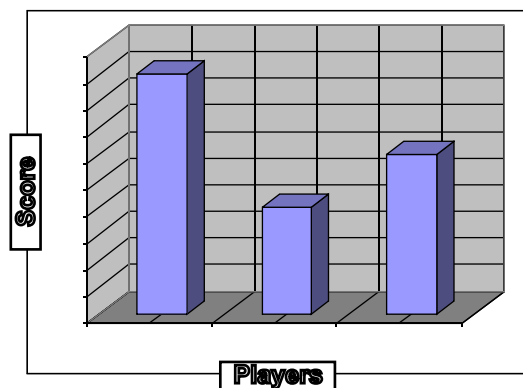= 26 cm.

CHAPTER NO.11

11.1 — GRAPHS
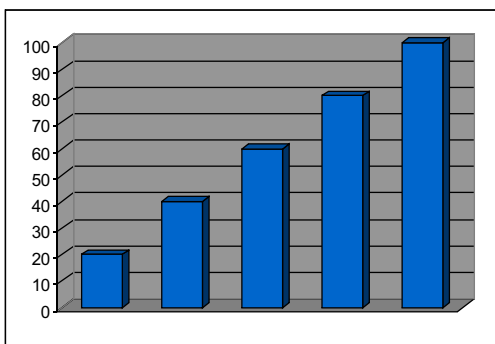
We already familiar with picture graph. Now we will learn about bar graphs.

1.   **Bar Graphs:**

Following is the picture of a bar graph showing the score of three players.

Here names of players are shown along horizontal axis.

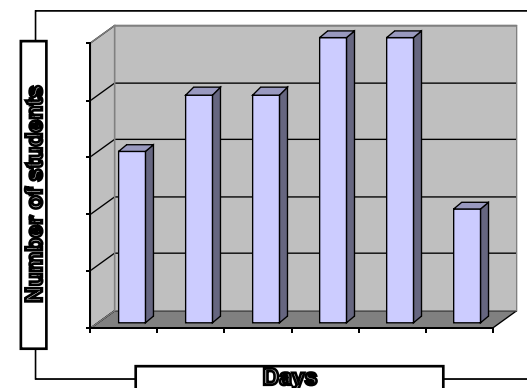The score players is shown along vertical axis.

From the bar graph a chart can be prepared as under

Name of player	Number of runs
Shahid	90
Waqar	40
Sami	65

Example-1 Read the bar graph showing attendance of students in the class during a week.

Here days of the week are shown along the horizontal axis.

Number of students is shown along the vertical axis.

Now prepare the chart and answer the following questions.

Days	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Attendance	15	20	20	25	25	10

a.   On what day, the attendance is lowest?   Saturday.

b.   On what days, the attendance is same?

        (Tuesday, Wednesday)   (Thursday, Friday)

c.   What is the highest attendance ?   25

Example-2

Read the bar graph showing the marks secured by Hisham in the annual examination.
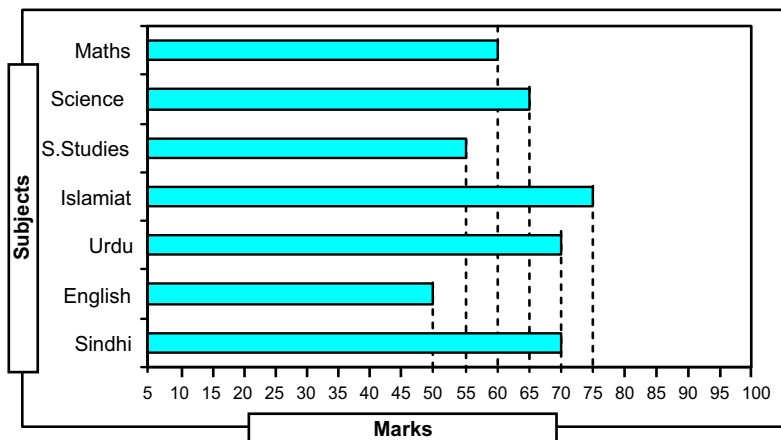
Here marks are shown along the horizontal axis and subjects along the vertical axis. Horizontal bars show marks secured in each subject.

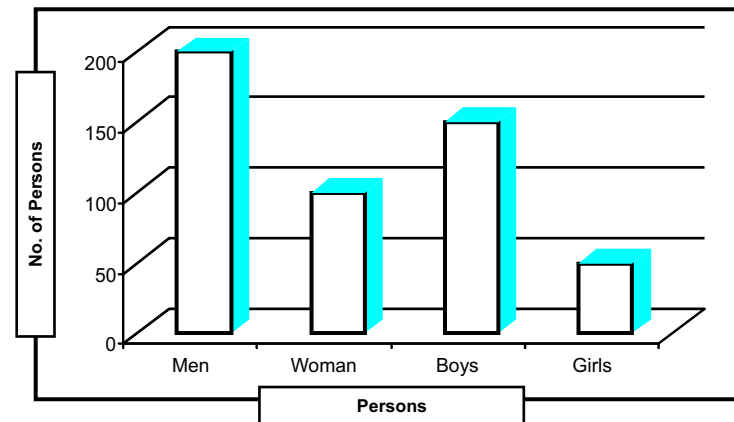Prepare the chart and answer the following qu3stions:

Subject	Sindhi	English	Urdu	Science	Maths	Islamiat	S.Studies
Marks Secured	70	50	70	65	60	75	55

A. In which subject he secured highest marks? = Islamiat

B. In which subject he secured lowest marks? = English

C. In which subject he has appeared? = 7

D. In which subject he secured equal marks? = Sindhi and urdu

E. in which subject he secured more than 70 marks? = Islamiat

Exercise 11.1

Read the bar graph showing the number of men, woman boys, and girls present on the occasion of PAKISTAN DAY in a school.

Prepare the chart and answer the following questions:

Persons	Men	Woman	Boys	Girls
Number	200	160	150	50

a. Who were more, men or women?

* Men.

b. Who were more, girls or boys?

* Boys.

c. Who were the most present on the occasion?

* Man.

d. Who was the total number of persons present?

* 160.

**(2)   Read the bar graph showing the income of a lady doctor during a week.**
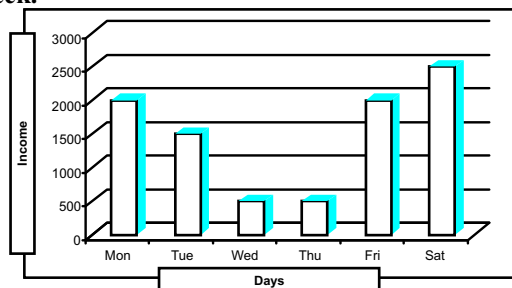
Prepare the chart and answer the following questions:

Days	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Income	2000	1500	500	500	2000	2500

a.   On what day her income is maximum?

*   Saturday.

b.   What is her maximum income?

*   2500.

c.   What is her minimum income?

*   500.

d.   On what days her income?

*   Monday of Saturday.

e.   On what days her income is the minimum?

*   Wednesday.

f.   What is her income for the whole wee?

*   6500.

**The bar graph given below shows the marks secured by Huma in her terminal examination.**
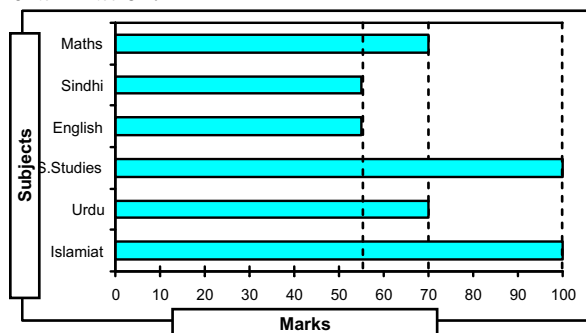
Prepare the chart and answer the following questions:

Subject	Maths	Sindhi	English	S.Studies	Urdu	Islamiat
Marks Secured	70	55i	55	100	70	100

a.   in which subject she has secured the highest marks?

*   S.Studies, Islamiat.

b.   in which subject she secured the lowest marks?

*   Sindhi, English.

c.   how many marks she has secured in is Iamiat?

*   100.

d.   what is the total number of marks secured by has?

*   440.

e.   in which subjects she has secured equal marks?

*   Math's, Urdu.

f.   What is the difference between the highest and the lowest marks?

*   70.

**The bar graph given below shows the production of wheat for four years, of a farmer:**
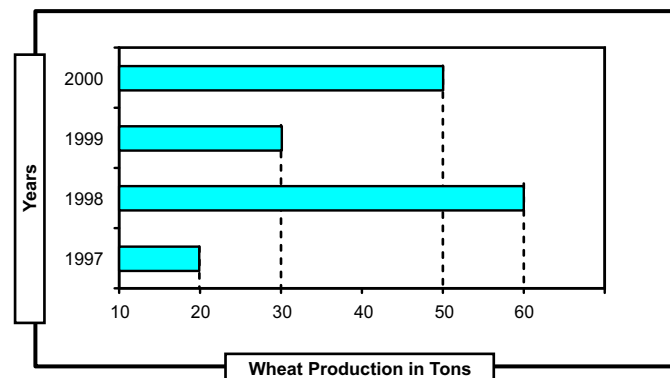
Year	1997	1998	1999	2000
Production in tons	20	60	30	50

a.   In which year the production was maximum?

*   1998.

b.   What was his minimum production?

*   20.

c.   What was the maximum production?
*   60.
d.   What is the difference between the production of 1998 and 1999?
*   20, 50
e.   In which year the production was 60 tons ?
*   1998.
f.   In which year the production was minimum?
*   1997.
g.   In which year the production was 30 tons?
*
h.   What is the difference between the production of 1999 and 2000?
*

The bar graph given below shows the monthly salaries of the employees of a factory.
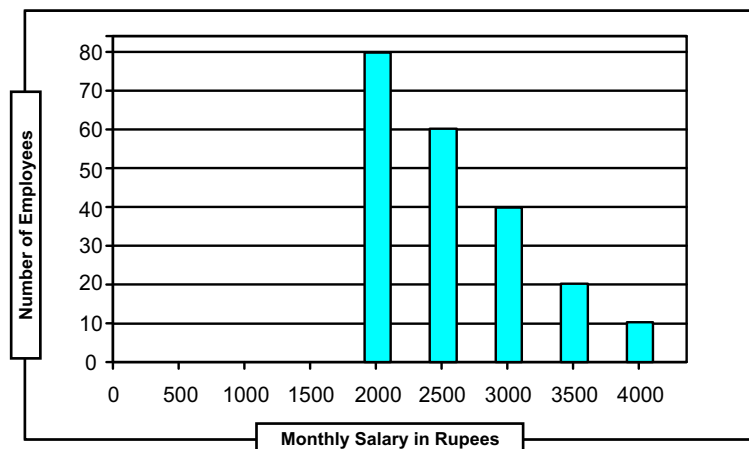
Prepare the chart and answer the following questions:

a.   How many employees draw Rs.2500 per month?

*   60.

b.   How many employees draw Rs.4000 per month?

*   10.

c.   What is the salary that largest number of employees draw?

*   2000.

D.   What is the number of lowest paid employees?

*   80.

e.   What is the lowest salary?

*   2000.

f.   How many employees draw Rs.3500?

*   20.

g.   What is the total number of employees?

*   80.

h.   What is the highest salary?

*   4000.