Government of Karnataka

MATHEMATICS

Textbook cum Workbook

(Revised)

English Medium



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Third Standard

Part - II

Karnataka Text Book Society (R.)
6th Cross, Malleshwaram, Bengaluru-560 003

Part - II

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Chapter-6

DIVISION

T9J9R1

After studying this chapter you can

- explain division from context of equal grouping and sharing,
- relate division with multiplication,
- compute division facts
  - _ by grouping,
  - _ by using multiplication tables.

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Equal distribution and grouping:

1.Raju was not well. So he went to the doctor. The doctor examined and gave 8 tablets and advised him to take two tablets daily.

Now tell me, how many days he will take those 8 tablets.

1st day he takes 2 tablets = 

2nd day he takes 2 tablets = 

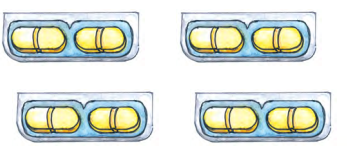
3rd day he takes 2 tablets = 

4th day he takes 2 tablets = 

He will take those 8 tablets in 4 days.

$$8 - 2 = 6,\quad 6 - 2 = 4,\quad 4 - 2 = 2,\quad 2 - 2 = 0$$

∴ 8 can be grouped into 4 groups each having 2.



4 groups of 2 is 8.

2. Latha had 12 balloons. She wanted to distribute them equally among her 4 friends. How many balloons does each one get ?



First she gave one balloon to each of the 4 friends.

$$\begin{array}{r} 12 \\ -4 \\ \hline 8 \end{array}$$



Again she gave one balloon to each.

$$\begin{array}{r} 8 \\ -\,4 \\ \hline 4 \end{array}$$



Remaining 4 she gave one each.

$$\begin{array}{r} 4 \\ -\,4 \\ \hline 0 \end{array}$$



∴ 12 is shared among 4 each having 3
∴ 12 is divided into 4 groups of 3 each.
∴ 12 divided by 4 is 3.

$$\begin{array}{r} 3 \\ 4\,)\,12 \\ 12 \\ \hline 00 \end{array}$$

The process of sharing or grouping equally is called division.

÷ is the division sign.

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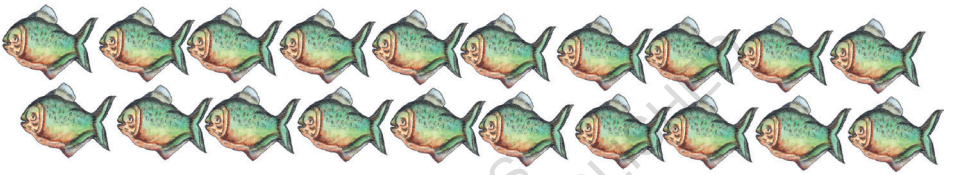
Exercise 6.1

I.

1) Divide the 12 balls into groups of 3.



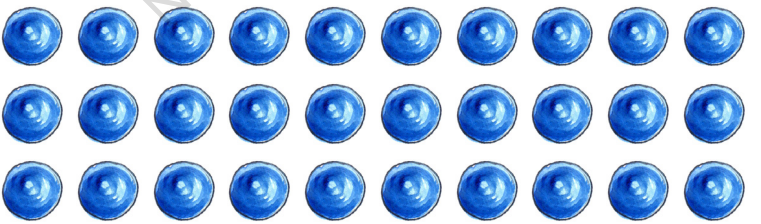
2) Divide the fish into groups of 4.



3) Divide the animal faces into groups of 2.



4) Divide the marbles into groups of 5.



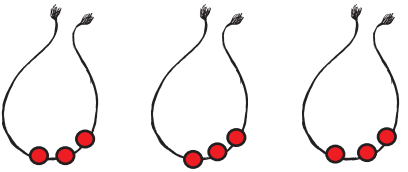
5) Divide the lollipops into groups of 6.

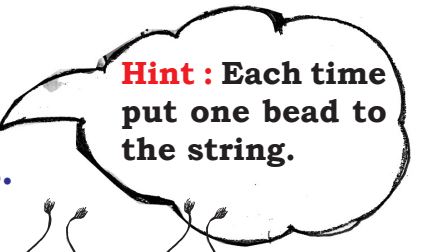


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II. Put equal number of beads in each string.

Model: Put 9 beads into 3 strings .

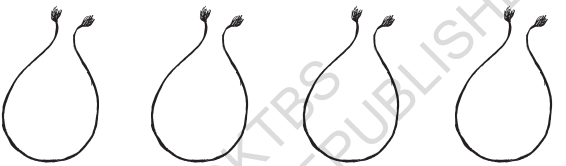




1. Put 20 beads into 5 strings.



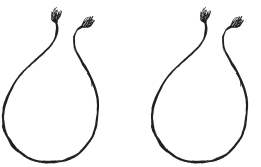
2. Put 24 beads into 4 strings.



3. Put 36 beads into 6 strings.



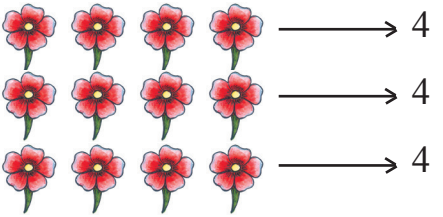
4. Put 14 beads in 2 strings.

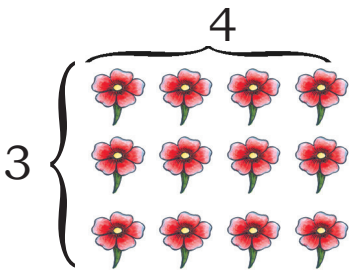


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Relation between division and multiplication.

3 times 4 is 12.
4 x 3 = 12





12 flowers are divided into 3 groups of 4 flowers.

```
4 ) 1 2 (3
    1 2
    ---
    0 0
    ---
```

Multiplication form: **Division form:**

3 x 4 = 12 ⟶ 12÷4=3

4 x 3 = 12 ⟶ 12÷3=4

Every multiplication form has a corresponding division form.

∴ Division and multiplication are related to one another.

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Example : 1. 6 x 2 = 12 ⟶ 12÷2=6, 12÷6=2

2. 4 x 7 = 28 ⟶ 28÷7=4, 28÷4=7

3. 8 x 3 = 24 ⟶ 24÷3=8, 24÷8=3

Exerise 6.2

I. Fill in the blanks :-

1. If 7x3=21 then, 21 ÷ 3 = ...
2. If 9x6=54 then, 54÷ 6 = ...
3. If 5x8=40 then, 40 ÷ ..... = 5
4. If 5x2=10 then, 10 ÷ 2 = ...
5. If 3x6=18 then, ...÷ 6 = 3
6. If 7x9=63 then, 63 ÷ ..... = 7

II. Match the division form with the multiplication form by drawing a line.

A	B
1) 8 ÷ 2 = 4	5 x 3 = 15
2) 20 ÷ 4 = 5	9 x 3 = 27
3) 18 ÷ 2 = 9	4 x 2 = 8
4) 15 ÷ 3 = 5	5 x 4 = 20
5) 27 ÷ 3 = 9	8 x 2 = 16
6) 16 ÷ 2 = 8	9 x 2 = 18

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III. For each multiplication form write the corresponding division form:

1. 8 x 4 = 32 → 32÷4=8, 32÷8=4
2. 9 x 8 = 72 →

3. 7 x 6 = 42

4. 8 x 7 = 56

5. 10 x 5 = 50

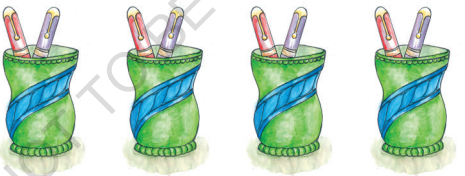
Divide by grouping

Akbar had 12 pens. He puts all of them equally into 4 pen stands. How many pens does he put in each pen stand?

Start by putting 1 pen in each penstand.



Put one more in each pen stand.



Put the remaining 4 pens in such a way that there is one in each pen stand



Then 12 can be divided into 4 group of 3 pens each.

∴ 12 ÷ 4 = 3

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Division using tables:

We can divide by using multiplication table.

Example : 1

12 ÷ 4

4 threes are 12. 4x3 =12

∴ 12 ÷ 4 = 3

dividend

Divisor 4) 1 2 (3 Quotient

1 2

0 0 Remainder

Example : 2

45 ÷ 5

5 nines are 45.

∴ 45 ÷ 5 = 9

dividend

Divisor 5) 4 5 (9 Quotient

4 5

0 0 Remainder

45 ÷ 5 = 9

↓ ↓ ↓

Dividend Divisor Quotient.

∴ Dividend ÷ Divisor = Quotient

or

Divisor) dividend (Quotient

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Example : 3

28 ÷ 7

7 fours is equal to 28.

∴ 28 ÷ 7 = 4

dividend

Divisor 7) 2 8 (4 Quotient

2 8

Remainder 0 0

- Any number divided by 1 gives the number itself as a quotient.

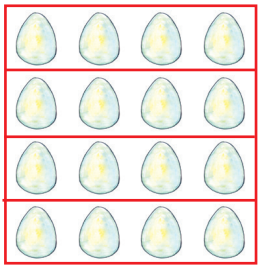
  Example : 3 ÷ 1 = 3, 4 ÷ 1 = 4, 5 ÷ 1 = 5

- Any number (except 0) divided by itself gives 1 as the quotient.

  Example : 3 ÷ 3 =1, 4 ÷ 4 =1, 5 ÷ 5 =1

Exercise 6.3

I. Group the following and write the division form for each.

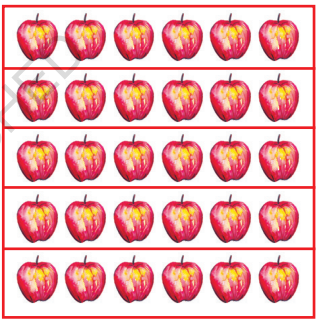


1. Total eggs = 16

   Eggs in each group = 4

   Number of groups = 4

   ∴ 16 ÷ 4 = 4



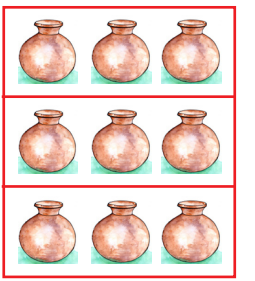
2. Total Apples = 30

   Apples in each group = 6

   Number of groups = _____

   _____

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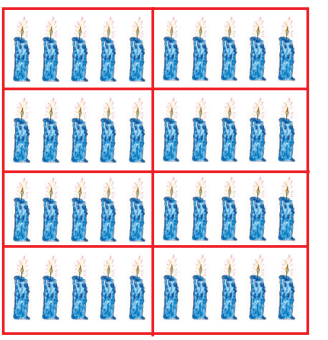


3. Total Pots = 9

   Pots in each group = 3

   Number of groups = _____

   _____



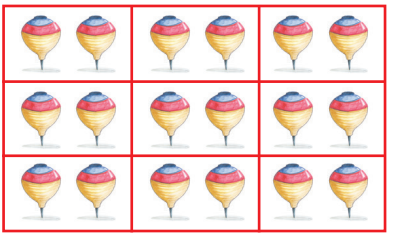
4. Total candles = 40

   Candles in each group = 5

   Number of groups _____

   _____

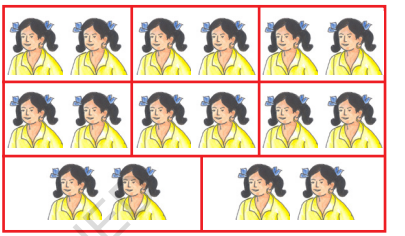
5. Total Tops = 18 .
Tops in each group = 2.
Number of groups =_____.
_____.



II. Write the division form using the multiplication table.

1. 16 girls are there.
2 in each team.
How many teams are there?
16 ÷2 = 8 Ans : 8 teams.

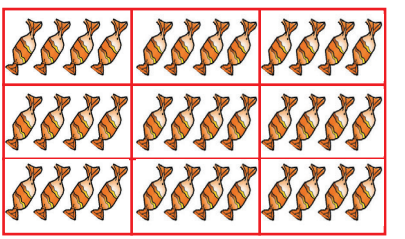
$$\begin{array}{r} 2\,)\,1\,6\,(8 \\ 1\,6 \\ \hline 0\,0 \end{array}$$



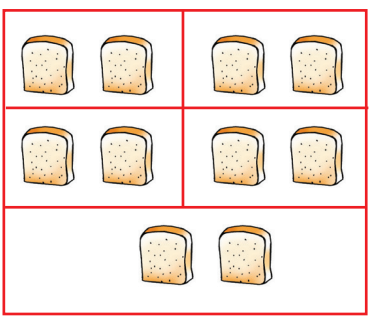
2. 18 trees are there in 3 rows.
How many trees are there in each row?
_____Ans_____



3. 36 toffees are there
4 for each boy.
How many boys are there?
_____Ans_____



4. 10 pieces of bread are there.
2 pieces in each sandwich.
How many sandwiches can be prepared?
_____Ans_____



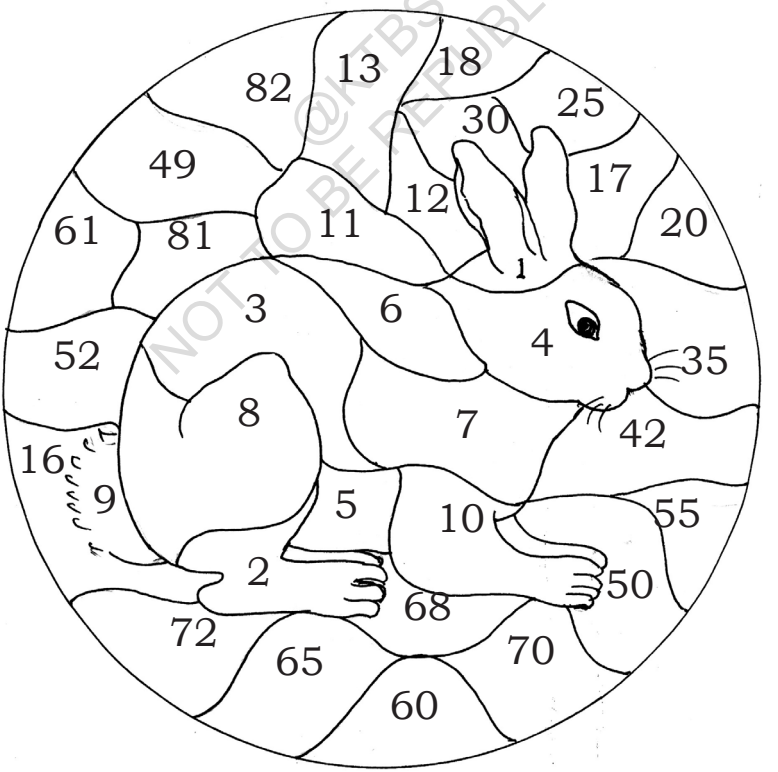
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5. 64 Soldiers are there
8 in each row.
How many rows are there?

_____ **Ans** _____



III. Divide the following and colour the answer given in the picture with any one colour.



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1. 6 ÷ 2

2. 60 ÷ 10

3. 49 ÷ 7

4. 8 ÷8

5. 20 ÷ 5

6. 18 ÷ 9

7. 5 ÷ 1

8. 30 ÷ 3

9. 81 ÷ 9

10. 72÷ 9

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Chapter-7

MENTAL ARITHMETIC

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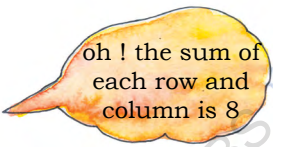
After studying this chapter you can

* add and subtract single digit numbers and two digit numbers mentally,
* double the two digit numbers mentally (not exceeding two digits).

Magic Square

Activity 1 :





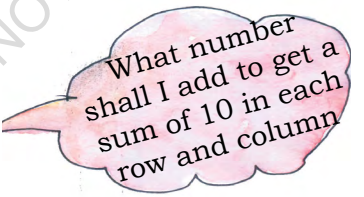
2	+	4	+	2
+				+
5		8		3
+				+
1	+	4	+	3

2 + 4 + 2 = 8
2 + 5 + 1 = 8
1 + 4 + 3 = 8
2 + 3 + 3 = 8

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Activity 2 :

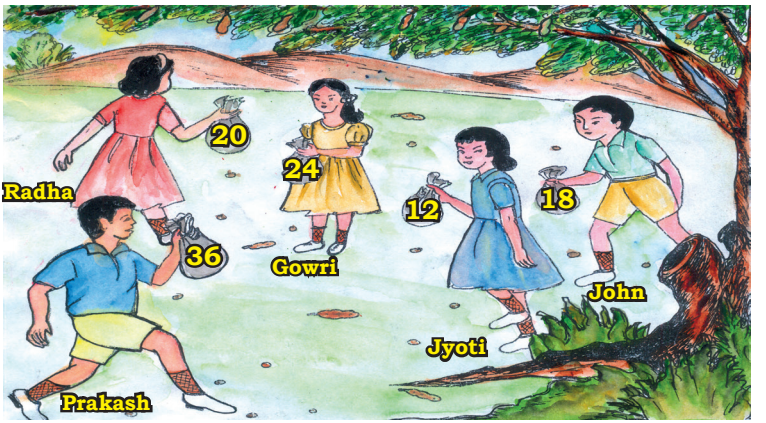




2	+	3	+	5
+				+
		10		
+				+
	+		+	

2 + 3 + 5 = 10
__ + __ + __ = 10
__ + __ + __ = 10
__ + __ + __ = 10

Activity 3 Play with numbers



John, Radha, Gowri, Prakash and Jyothi have collected tamarind seeds fallen on the ground under a tamarind tree. Observe the number of tamarind seeds they have in the figure. Calculate mentally and answer the following.

- John and Radha together have 38 tamarind seeds. Say true or false _____
- How many tamarind seeds do Gowri and Prakash together have? _____
- How many more tamarind seeds does Radha have than Jyothi? _____
- If the number of tamarind seeds that Gowri and John have to be equal, then John has to collect 7 more seeds say true or false? _____
- If the number of tamarind seeds that Radha and Jyoti have to be equal, how many more seeds should Jyothi collect ?_____
- Prakash and Gowri together have 60 seeds. If Gowri has 24 seeds then how many seeds does Prakash have? _____

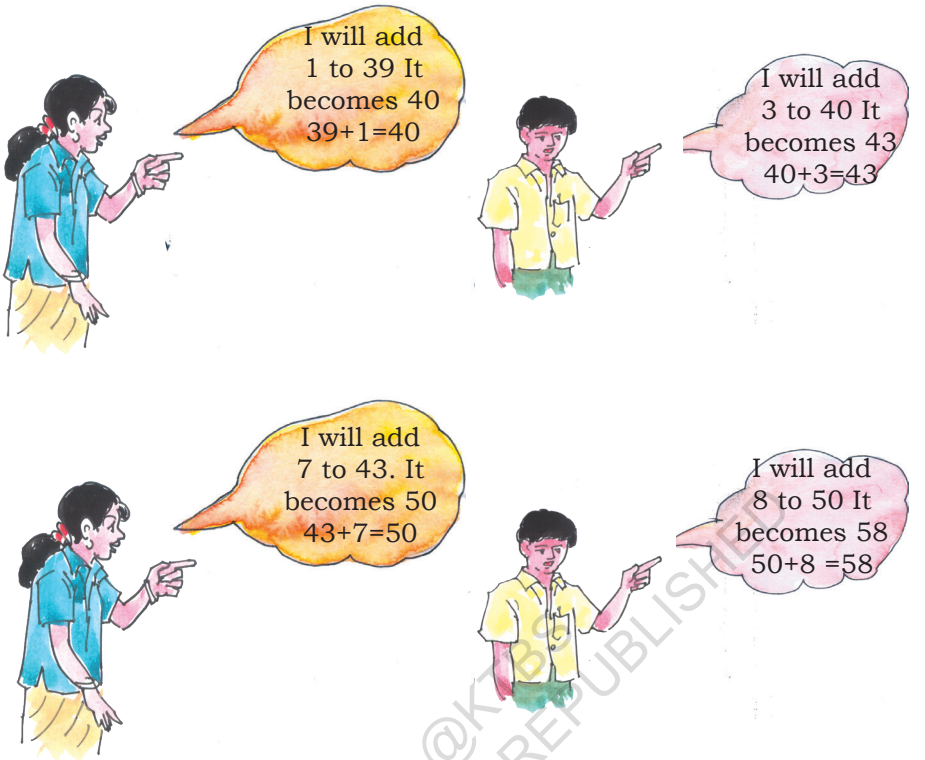
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Activity 4

Game of reaching 100



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Like this, the game can be continued by adding any number from 1 to 9. This game can either be played by 2 students or 2 teams, The one who reaches 100 first is the winner.

Calculate mentally. Write true or false.

1) 10 + 10 = 20 + 5 = 25 + 6 = 31 .....

2) 50 - 5 = 45 - 10 = 35 - 4 = 30 .....

3) 25 + 3 = 28 + 4 = 32 + 5 = 39 .....

4) 60 - 3 = 57 - 5 = 52 - 6 = 46 .....

5) 40 + 9 = 49 + 8 = 57 + 7 = 64 .....

Calculate Mentally and fill in the blanks.

1) 40 + 12 = 52

2) 75 + 13 = ☐

3) 80 - 10 = ☐

4) 75 - 35 = ☐

5) 90 + 7 = ☐

Fill in the blanks as shown.

1) Thirty – Five = Twenty five

2) Forty + Eight = _____

3) Fiftynine + Seven = Sixty six

4) Fiftynine – Nine = _____

5) Ninety + Nine = Ninetynine

6) Fifteen + Ten = _____

7) Twenty + Seventeen = _____

8) Fortyfive – Fifteen = Thirty

9) Seventy seven – Seventeen = _____

10) Sixty four + Fifteen = Seventynine

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Exercise 7.1

I. Solve mentally. Put ✓ if it is true and × if it is false as shown.

1) 10 + 5 = 15 ✓
2) 12 + 7 = 20 ×
3) 18 + 10 = 28 ☐
4) 15 + 19 = 24 ☐
5) 20 - 15 = 15 ☐
6) 20 - 6 = 4 ☐
7) 18 - 7 = 12 ☐
8) 35 - 9 = 26 ☐
9) 40 - 30 = 10 ☐
10) 29 - 5 = 24 ☐
11) 32 + 18 = 48 ☐
12) 38 + 8 = 56 ☐
13) 50 - 32 = 28 ☐
14) 42 - 12 = 20 ☐
15) 25 + 35 = 60 ☐
16) 59 + 7 = 66 ☐

II. Calculate mentally. Write true ✓ or false (×) as shown.

1) Fifteen + Nine = Twenty four ☑
2) Twenty – Eight = Ten ☐
3) Fifteen – Ten = Five ☐
4) Twenty four + Sixteen = Fifty ☐
5) Forty five – Twenty five = Twenty ☐

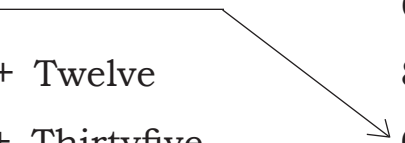
III. Calculate mentally and write the answers.

1) Nine + Twelve = Twenty one
2) Eleven + Thirteen = _____
3) Twenty four – Eight = _____
4) Sixty two + Fifteen = _____
5) Thirty one – Ten = _____

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IV. Calculate mentally. Match by drawing lines.

	'A'	'B'
1)	20 - 14	66
2)	Eighteen + Twelve	80
3)	Fortyfive + Thirtyfive	06
4)	29 + 7	30
5)	Ninety – Twentyfour	25
		36



V. Calculate mentally and write the answer.

1) 10 + 8 = ☐ 2) 20 - 7 = ☐

3) 15 - 7 = ☐ 4) 38 + 7 = ☐

5) 18 + 9 = ☐ 6) 40 - 6 = ☐

7) 25 - 6 = ☐ 8) 39 + 8 = ☐

9) 42 + 8 = ☐ 10) 27 - 8 = ☐

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VI. Calculate mentally and write the answer.

1) You have 18 marbles. You won 17 more marbles in a game. How many marbles do you have now?

_____

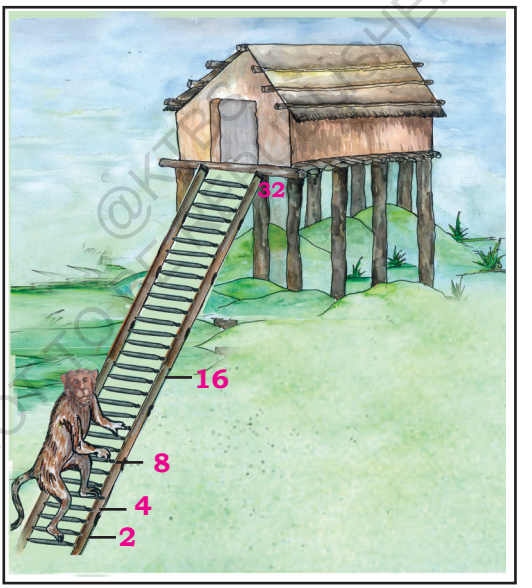
2) You have 45 chocolates to distribute to your friends on your birthday. If you gave away 32 chocolates, how many chocolates are remaining? _____

3) You have 48 tamarind seeds. If you lose 25 tamarind seeds in a game, how many tamarind seeds do you have now? _____

4) There are 87 ice-candies in a box. If 9 more ice-candies are added to the box, how many ice-candies are there in the box ? _____

5) There are 60 laddus in a sweet shop. If 29 laddus are sold, how many laddus are remaining? _____

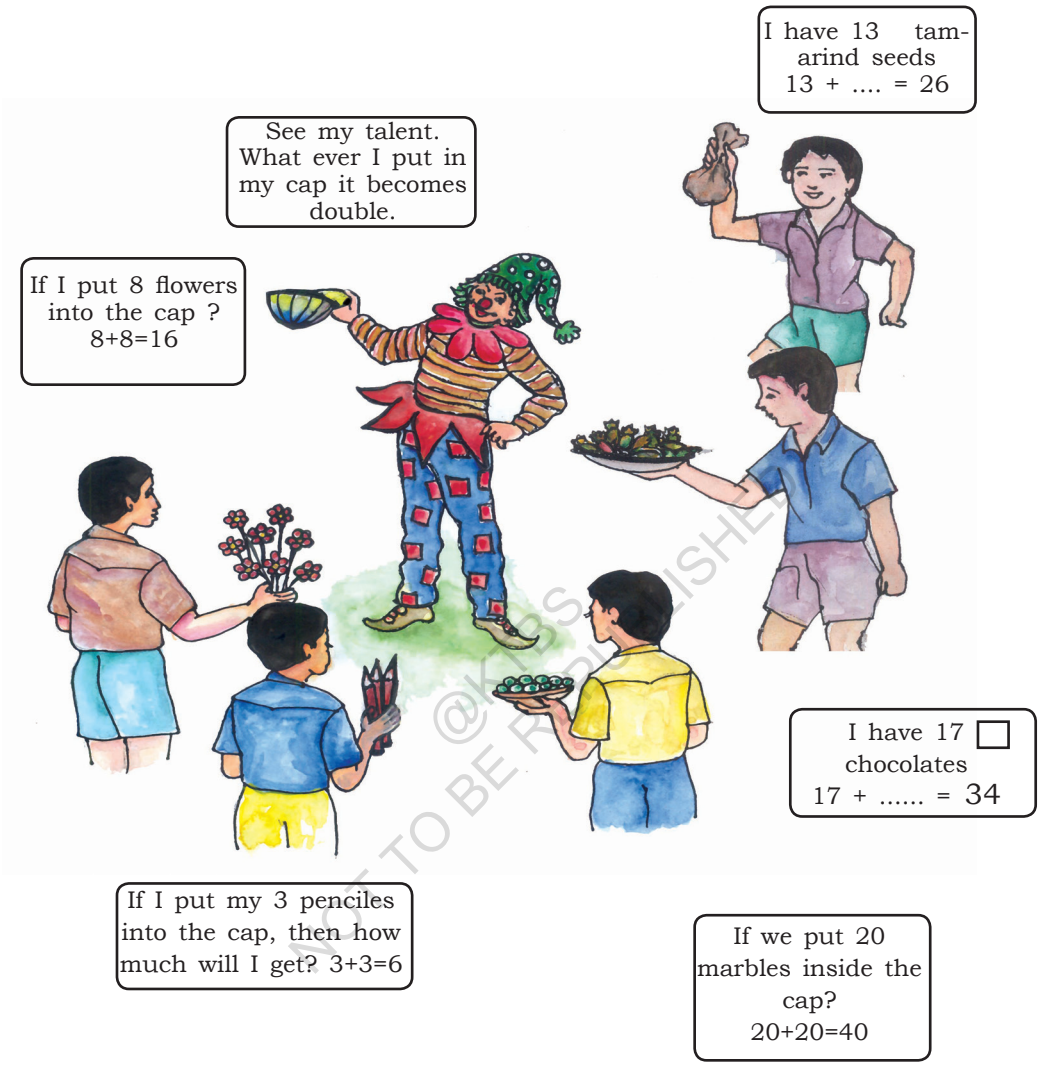
Game



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A monkey is jumping up the ladder. First time he climbs 2 steps, second time he climbs 4 steps, third time he climbs 8 steps. Then, how many times should the monkey jump to climb a ladder of 32 steps?

Doubling game of a Magician:



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Read and Learn :

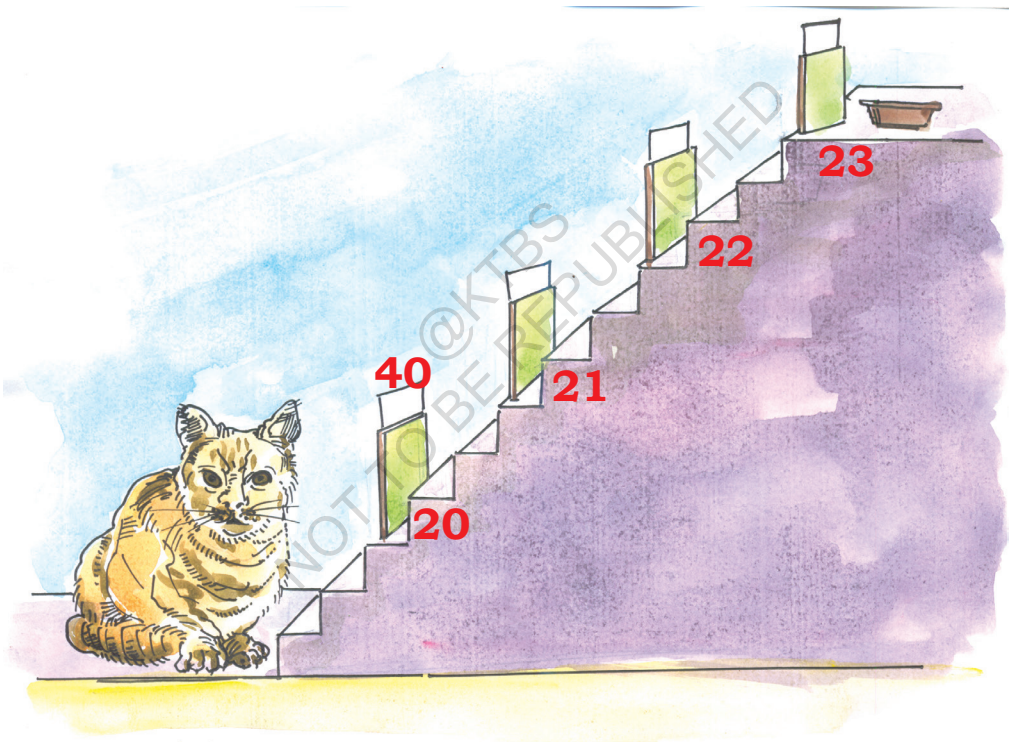
Twice the value of 10 = 20 Twice the value of 15 = 30
Twice the value of 11 =..... Twice the value of 30 = 60
Twice the value of 13 = 26 Twice the value of 40 = ...
Twice the value of 19 =.... Twice the value of 21 = 42
Twice the value of 27.... Twice the value of 17 = ...

Double the remaining numbers mentally by yourself

Observe

- When we multiply a given number by 2, then it becomes double.
- When we add the same number to itself, it gets doubled.

For each number given below the gate, write its doubled numbers in the upper part of the gate.



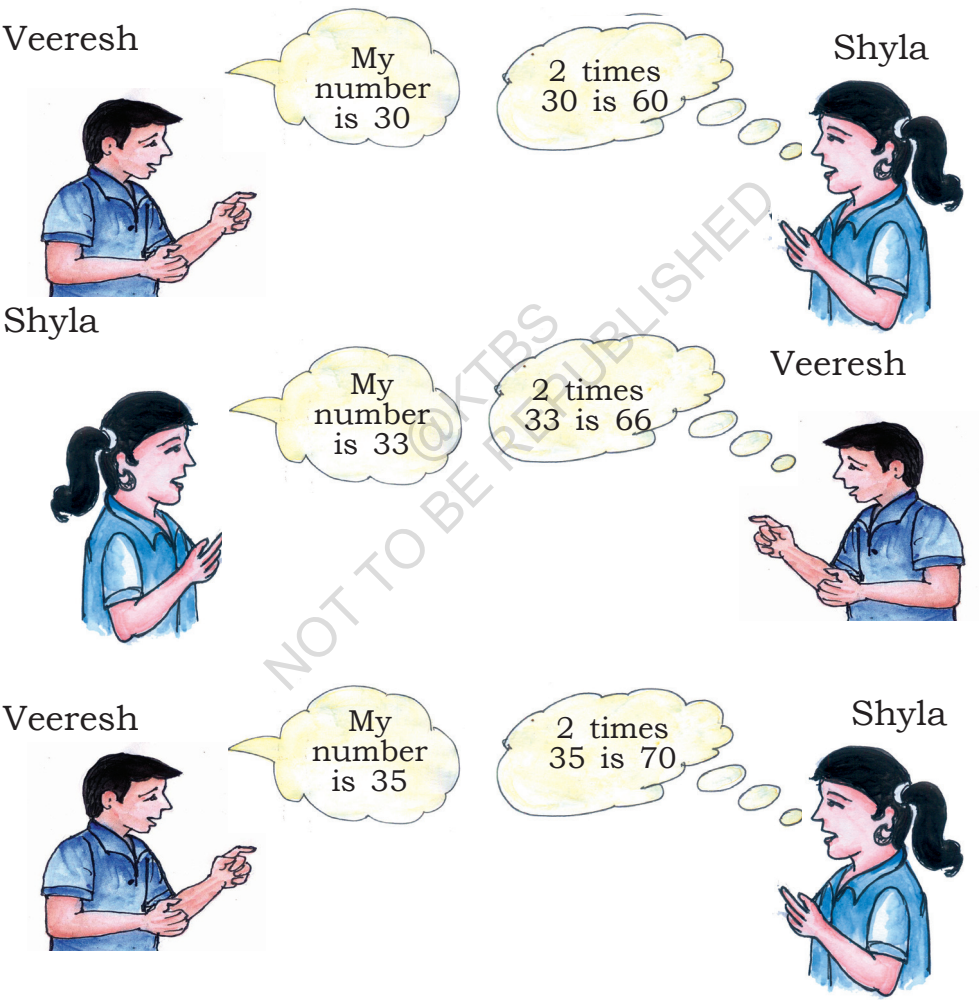
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If the cat Twinkle wants to drink milk, it has to cross the gates one by one. The gates open only when it writes twice the number given on each gate. Help Twinkle to write the correct answer.

Game of Doubling a number :

Rules for playing the Game.

- Two students can play the game.
- The game must be played using two digit number only.



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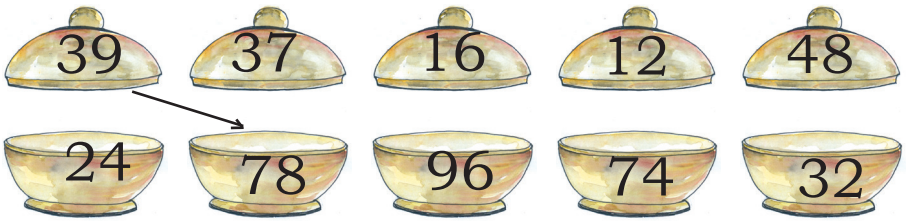
Continue the game in the same way.

Whoever gives the wrong answer he/she is the loser of the game.

Exercise 7.2

1) Find out the appropriate lid for the Vessel :

A number is written on each lid and a corresponding doubled number is written on the Vessel. By drawing lines, match the lids with proper Vessel.



2) Double the following numbers and write.

10 → 20	16 →	25 →
11 →	17 →	30 →
12 →	18 →	35 →
13 →	19 →	40 →
14 →	20 →	45 →
15 →	21 →	48 →

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3) Write twice the given number as shown in the model :

Model : Nineteen - Thirty eight.

1) Twenty →
2) Twenty six →
3) Thirty eight →
4) Thirty two →
5) Twenty seven →
6) Forty Four →

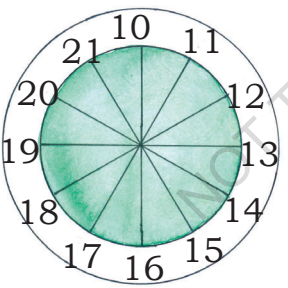
4) Multiply the given number by 2 mentally and write the answer in the box

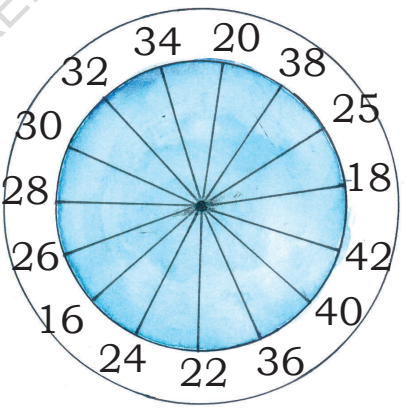
X	7	9	12	24	36	43	49	50	100
2									

Do and play :

Take 2 cardboard sheets and cut them into smaller and bigger wheels as shown in the picture. Write numbers on the smaller wheel and twice the number on bigger wheel as shown in the figure below. Place the smaller wheel on bigger wheel and join them by thread at the center. Now match the number on smaller wheel with its corresponding doubled number on bigger wheel.

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Chapter-8

Fractional Numbers

R4E8G4

After studying this chapter you can

- Identify half, one fourth and three-fourth of a whole number and relate to real life situation,
- Identify the symbolic form of half ($\frac{1}{2}$) quarter ($\frac{1}{4}$) three fourth ($\frac{3}{4}$) and explain their meanings.



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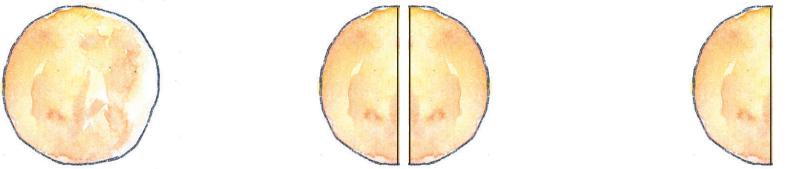
Half, quarter, three fourth

Kiran's mother gave him one roti to feed the dog Tommy. His sister Jyothi came and started quarreling with Kiran for feeding the dog. Then mother came, enquired reason for the quarrel and told each of them to feed the dog with half a roti.

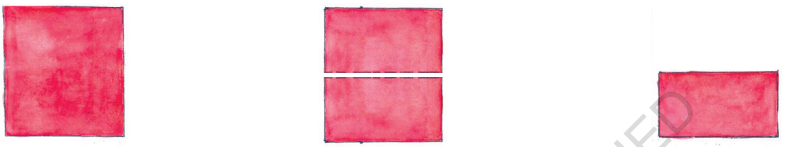


See the picture and identify the half parts

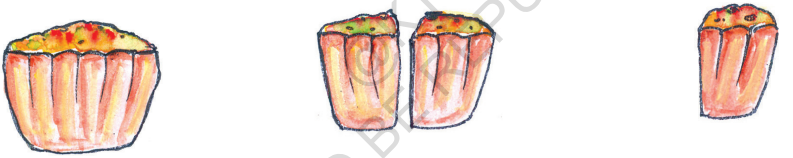
One Roti | Two Equal Parts | Half Roti



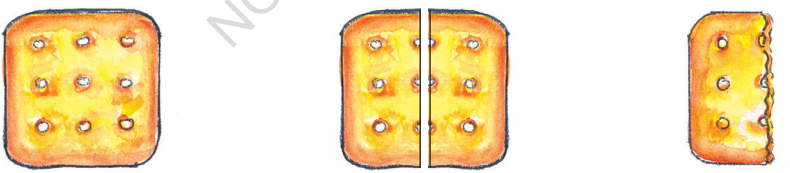
One Page | Two Equal Parts | Half Page



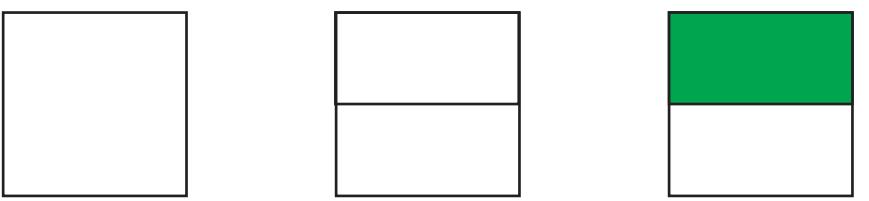
One cake | Two Equal Parts | Half cake



One Biscuit | Two Equal Parts | Half Biscuit



One Square | Two Equal Parts | Half Part is coloured.



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See the picture and identify the half parts



* Half of the glass is filled with water.
* Half of the glass is empty.



* Half of the square is coloured.
* Half of the square is not coloured.

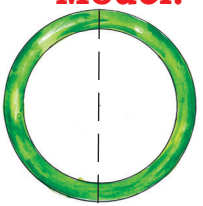


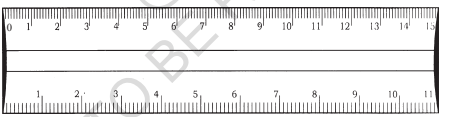
* Half of the circle is coloured red.
* Half of the circle is coloured green.

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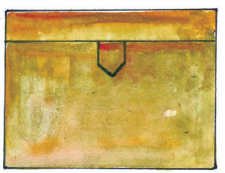
Some Pictures are given below. Can you divide all the possible pictures into two equal parts using a dotted Line?

Model:

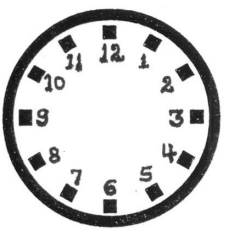






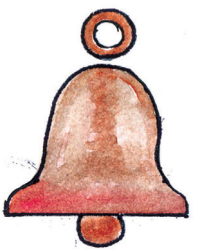




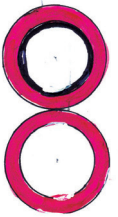


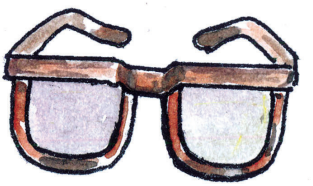




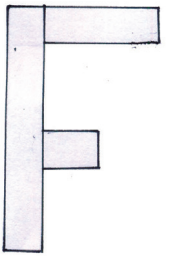


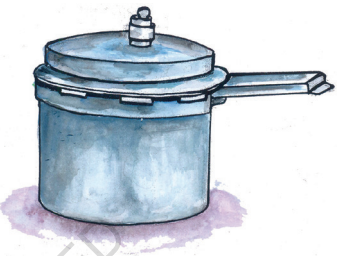












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Observe the half parts of the letters given below and complete it by writing the remaining half.

Model :

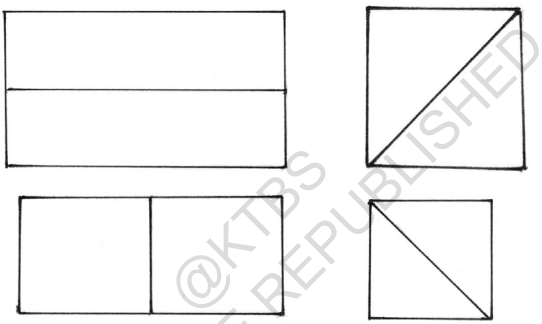




* If we keep one half on the other half, they co-incide each other.
* In two equal parts, each part is called as a half.
* If we join two halves, we get a whole.

Learn by doing :

Take four pages of same shape as shown below. Now, draw lines as indicated in the picture. Is each part a half of the page?



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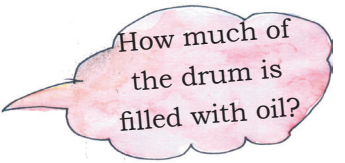
How much is a quarter ? Know it

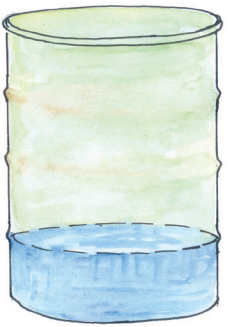
How to divide this bread into four equal parts for these four kittens?



* Among four equal parts, one of the part is filled with oil. That means, quarter of the drum is filled with oil.

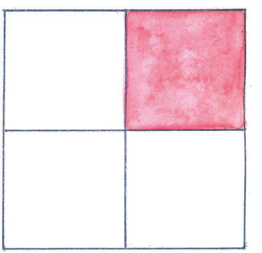






* The square is divided into four equal parts and one of the parts is coloured. That means, quarter of the square is shaded.



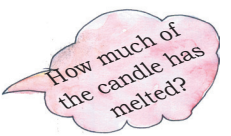


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* Before lighting the candle there were four equal parts. One of the part is melted. That means, quarter of the candle is melted.









* How much of the chocolate did putty eat?
There were four equal parts and she ate one part.
This means, she has eaten a quarter.

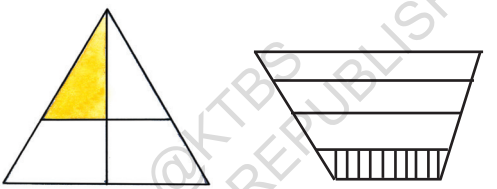
1)

2)



*

The shaded portion of the picture is not a quarter why ?



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Remember

* In four equal parts, each part is called a quarter.
* Half of a half is called a quarter.
* In a whole there are four quarters.

Know Three-fourth by folding a paper.

* A sheet of paper is taken and is divided into four equal parts.
* One of the equal parts is filled with green colour. You know that the coloured part is a quarter.
* The remaining three equal parts are coloured red. Now, how many parts of the paper are in red colour?

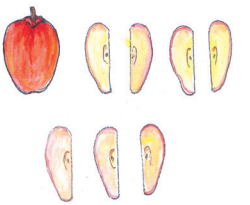
Observe the pictures given below:



* The glass has four equal parts, three parts are filled with water.



* The cake has four equal parts. One part is eaten.



* The apple is divided into four equal parts and one part is eaten.

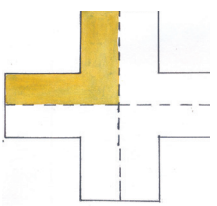
©KTBS NOT TO BE REPUBLISHED

Remember

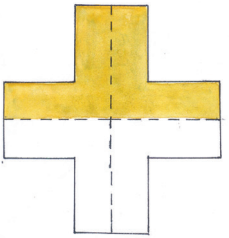
* Among four equal parts, three parts are called three-fourth.
* Three quarter together forms the three-fourth.

Observe the picture and recall :

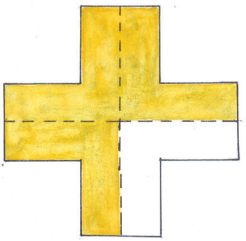




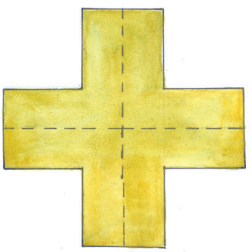
One quarter



Two quarter (one half)



Three quarter (three-fourth)



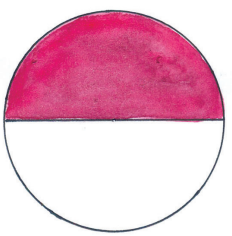
Four quarter (one whole)

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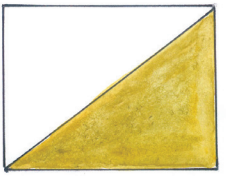
Exercise: 8.1

I. Write the indicated parts as shown in the example.

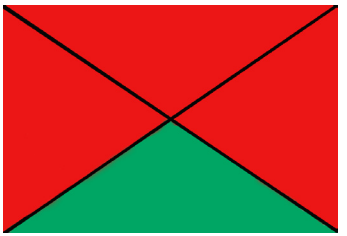
Model :



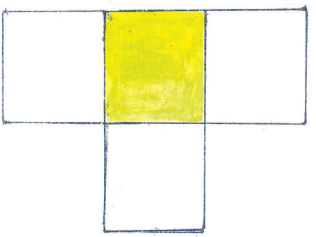
* shaded part = half
* Unshaded part = half



* Unshaded part = half
* Shaded part = _____



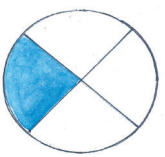
* Green coloured part = _____
* Red coloured part = _____



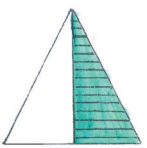
* Shaded part = _____
* Unshaded part = _____

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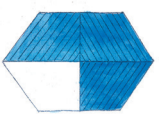
II. Match the shaded part in the picture with suitable fractions.



Half



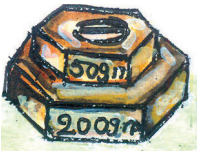
Three-fourth



Quarter

III. Write as shown in the example

Model



Quarter kg





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IV. Write as shown in the example.

Model.



Quarter rupee



→

.....

→



⟶ ----------

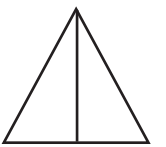


⟶ ----------

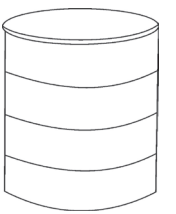
V. Shade the pictures as directed :

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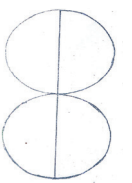
1) Shade half of the picture.



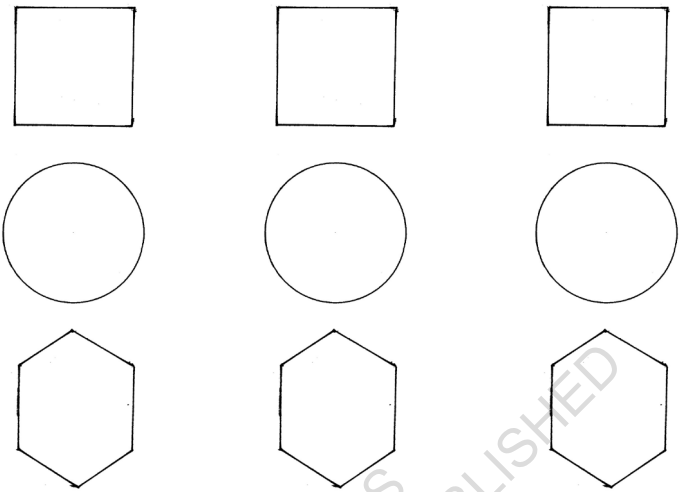
2) Fill three-fourth of the beaker with colour.



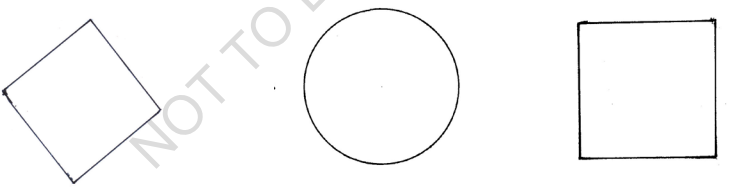
3) Colour quarter of the picture.



VI. Divide the pictures into two equal parts by drawing a line and colour half of it :



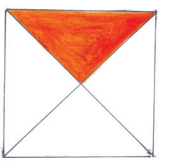
VII. Draw lines and shade quarter in each of the pictures given below.



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VIII. Draw the pictures of your liking and mark the fractions given below.

Example : Quarter



1) Half-

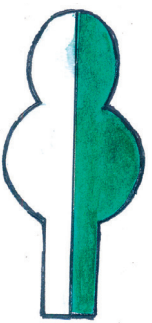
2) Quarter-

3) Three- fourth-

Numerical representaion of half, quarter, three fourth

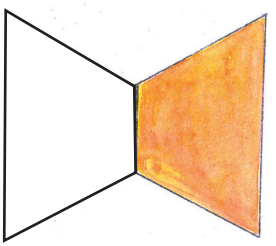
Recognising and understanding the fractions $\frac{1}{2}$ (Half), $\frac{1}{4}$ (Quarter), $\frac{3}{4}$ (three-fourth) in Numeric form

1)



* Number of equal parts in the picture = Two.
* Number of parts shaded = One.
* the shaded portion is called as half.
* Numerical form of half is $\frac{1}{2}$.

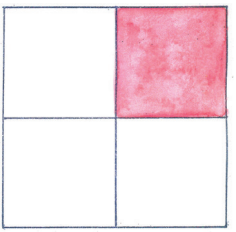
2)



* Number of equal parts in the picture = Two.
* Shaded portion=One.
* Fractional form of the shaded portion = $\frac{1}{2}$.
* Then, what does this fraction mean ?

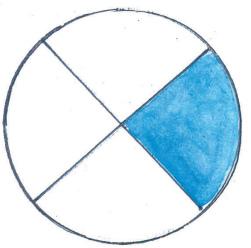
@KTBS NOT TO BE REPUBLISHED

If we divide one object into two equal parts, then, each equal part is represented by (half) $\frac{1}{2}$

1) 

* Number of equal parts in the picture are four
* Shaded portion is one
* Shaded portion is called a quarter.

* Quarter is represented as _____.

2) 

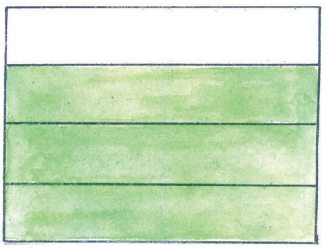
* Number of equal parts in the picture are four.
* Number of shaded part is one.
* Fractional form of the shaded portion is $\frac{1}{4}$
* What does this mean?

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When an object is divided into four equal parts, each equal part is called as a quarter and is represented by $\frac{1}{4}$

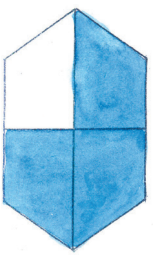
Now, let us try to understand, what is $\frac{3}{4}$?

1)



* Number of equal parts in the picture are four.
* Number of shaded portions are three.
* In fraction, the shaded portion is represented as $\frac{3}{4}$ (three-fourth.)
* Three-fourth is written symbolically as $\frac{3}{4}$

2)



* Number of equal parts are four.
* Number of shaded part is three.
* How is the shaded portion represented in fraction?
* It is represented as __.

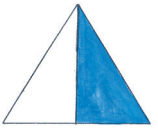
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When an object is divided into four equal parts, three equal parts together form the three-fourth. ($\frac{3}{4}$)

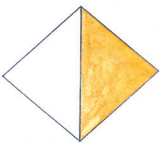
* If an object is divided into two equal parts, then each equal part is represented by $\frac{1}{2}$.
* If an object is divided into four equal parts, then each single part is represented by $\frac{1}{4}$.
* If an object is divided into four equal parts, then three parts together is represented by $\frac{3}{4}$.

Exercise : 8.2

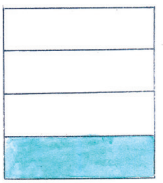
I. Observe figure and fill in the blanks

1) 

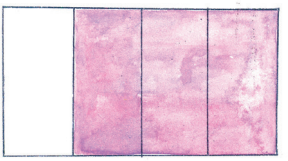
* Fractional form of the shaded portion = _____

2) 

* Fractional form of the shaded portion = _____

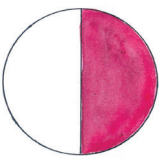
3) 

* Fractional form of the shaded portion = _____

4) 

* Fractional form of the shaded portion = _____

* Fractional form of the unshaded portion = _____

5 

* Fractional form of the shaded portion = _____

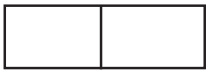
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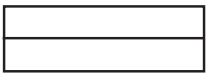
III. Match the following by drawing line :

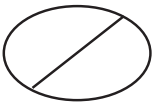
'A'	'B'
1) Half part	$\frac{1}{4}$
2) Quarter part	$\frac{3}{4}$
3) Three-fourth part	$\frac{1}{2}$

III. Shade the given pictures as directed.

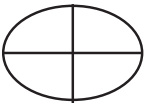
$\frac{1}{2}$

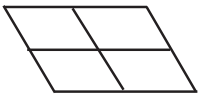


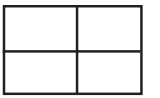




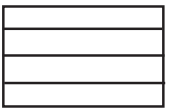
$\frac{1}{4}$

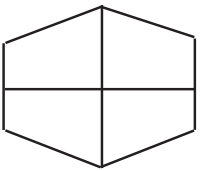


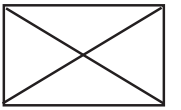




$\frac{3}{4}$







IV. Write the numerical form of the following :

1) Half part →
2) Quarter part →
3) Three-fourth part →

V. State the meaning of the given fractions as shown below :

1) Half → Dividing an object into two equal parts and taking one part. = $\frac{1}{2}$

2) Quarter →

3) Three-fourth →

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VI. Express the given figures in fractional form :

Example :

1)

2) 

3) 



Activity :

Playing dice with friends

Take a dice. Take flash cards and write $\frac{1}{2}, \frac{1}{4}, \frac{3}{4}$ on it. Stick the flash cards on the opposite sides of the dice. Now, make atleast five sets of flash cards representing these fractions.

Form a group of three students and play. Keep the flash cards in the middle of the group. Play the dice, take the flash card having the same value as it is on the dice. Pass on the dice and play in succession until all the flash cards kept at the middle are finished. Who ever has chosen the proper one and maximum number of cards properly, is the winner of the game.

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Chapter 9

MONEY

U1Z5C7

After studying this chapter you can

* convert rupees to paise using play money,
* add and subtract amounts using column addition and subtraction without regrouping,
* acquaint with simple rate charts and bills.

Convertion of rupees to paise

Activity : Prepare play notes and coins.

* Place a coin on the table and a thin plain sheet on it
* By holding the sheet tightly, rub the paper with a pencil to get the impression of the coin.
* Repeat this activity with different coins to get their impression.
* Now, cut the coin impressions carefully to obtain paper coins.





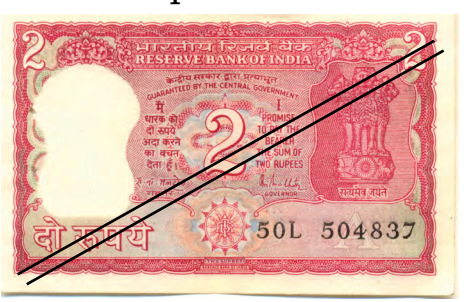






* cut white sheet into different shape of notes.





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Write the value of notes on these pieces of paper. Now you have coins and notes to play.

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Identify the coins which are equivalent to different notes



=



1 rupee is equal to two 50 paise coins

1 rupee is equal to 100 paise. symbol of rupee is ₹



=



=



=



* 2 rupee is equal to two 1 rupee coins.
* ₹ 2 equal to1 rupee one coin and two 50 paise coins.
* ₹ 2 equal to four 50 paise coins.

2 rupees is equal to 200 paise

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=



=



* 5 rupees is equal to five 1 rupee coins.
* 5 rupees is equal to two 2 rupee coins and one 1 rupee coin.

5 rupees is equal to 500 paise





* 10 rupees is equal to two 5 rupee coins.

* 10 rupees = Five 2 rupees coins.

* 10 rupees = Ten 1 rupee coins.

10 rupees is equal to 1000 paise

Exercise 9.1

I. Fill in the blanks

1. 1 rupee has _____ 50 paise coins.
2. 2 rupees has _____ 1 rupee coins and _____ 50 paise coins.
3. There are _____ 50 paise coins in 1 rupee 50 paise.
4. There are _____ 5 rupee coins in 10 rupees.
5. There are _____ 5 rupee coins in 20 rupees.

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II. Match the following by drawing lines.











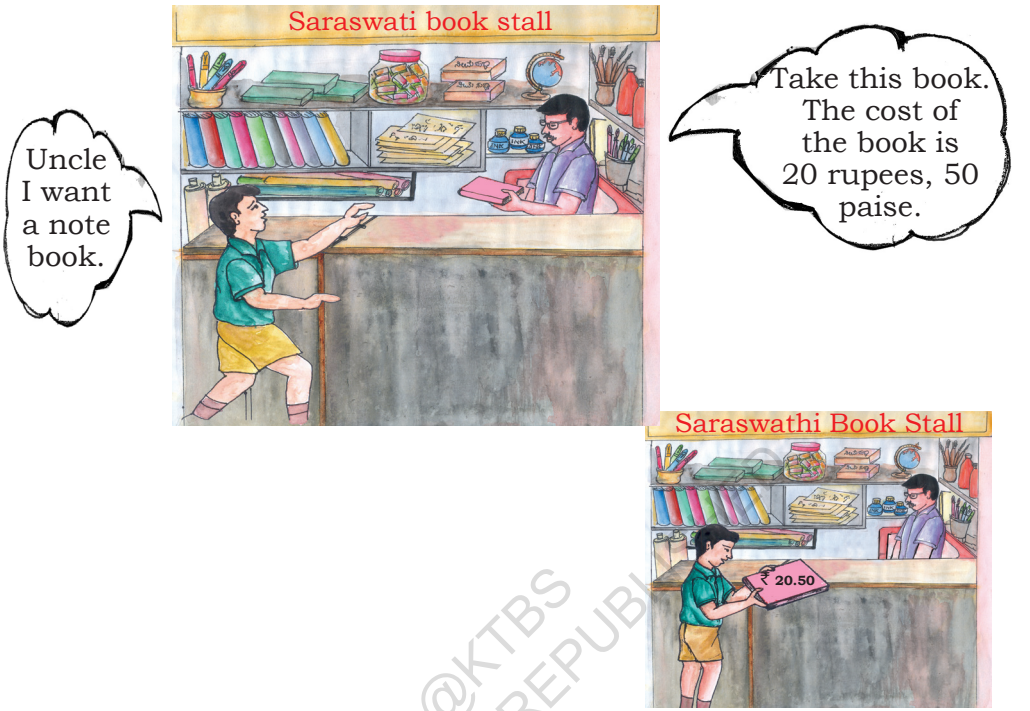






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How do you tell and write amount of money



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* The shopkeeper says, orally the cost of the book is 20 rupees 50 paise.

* In word, it can be written as, Twenty rupees and fifty paise.

* While writing in numbers, first write the rupee parts, place a dot (.) and then write the paise. 20 rupees 50 paise can be written as ₹ 20.50

Sl.No	Oral form	In words	numbers
1.	20 rupees 50 paise	Twenty rupees and fifty paise	₹ 20.50
2.	75 paise	Seventy five paise	₹ 0.75
3.	1 rupee	One rupee	₹ 1.00
4.	10 rupees 25 paise	Ten rupees and twenty five paise	₹ 10.25
5.	50 rupees	Fifty rupees	₹ 50.00

Exercise 9.2

I. Fill in the blanks.

1. The currency of India is _____
2. The smaller unit of rupee is _____
3. The symbol of rupee is _____
4. The number form of two rupees is _____

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II. Try this

Sl.No	Oral form	In words	In numbers
1.		Sixty six paise	₹ 0.66
2.	1 rupee		₹ 1.00
3.	20 rupees 50 paise	Twenty rupees and fifty paise	
4.		Eighty rupees and seventy five paise	
5.	96 rupees 75 paise		

Converting rupees to paise.

You know that, 1 rupee = 100 paise.

To convert rupees into paise

You Know that 1 rupee = 100 paise

Examples (When only rupees are given)

2 rupees = 2× 100 = 200 paise.

7 rupees = 7× 100 = 700 paise.

8 rupees = 8× 100 = 800 paise.

10 rupees =10× 100 = 1000 paise.

Rupees	Multiply by 100	paise
₹ 3	3 × 100	300 paise
₹ 5	5 × 100	500 paise
₹ 6	6 × 100	600 paise
₹ 9	9 × 100	900 paise

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When a rupee is to be converted to paise, multiply it by 100

Conversion of rupee and paise into paises

Examples :

1 rupee 25 paise = (1 × 100) + 25
= 100p + 25 p
= 125 paise.

5 rupee 50 paise = (5 × 100) + 50
= 500P + 50 P
= 550 paise.

Rupee and Paise	Method of Converting to Paise	Paise
3 rupees 50 paise	(3 × 100) + 50 300P + 50 P 350 paise	350 paise
9 rupees 5 paise	(9 × 100) + 5 900 P+ 5 P 905 paise	905 paise

When both rupees and paise are given and they have to be converted to paise, multiply only the rupee by 100 and add the paise to the product.

Conversion of rupee to paise orally

Sl.No.	Rupees	Paise
1.	₹ 5.00	500 Paise
2.	₹ 3.25	325 Paise
3.	₹ 6.55	655 Paise
4.	₹ 4.05	405 Paise
5.	₹ 6.19	619 Paise
6.	₹ 5.06	506 Paise
7.	₹ 0.95	95 Paise
8.	₹ 9.90	990 Paise

If we remove the dot between rupee and paise the number which remains represents paise.

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Exercise 9.3

I. Convert following into paise.

1) ₹ 3.00 = _____

2) ₹ 7.00 = _____

3) ₹ 8.00 = _____

4) ₹ 4.00 = _____

5) ₹ 6.00 = _____

6) ₹ 2.25 = _____

7) ₹ 6.25 = _____

8) ₹ 5.25 = _____

9) ₹ 7.75 = _____

10) ₹ 9.50 = _____

II. Fill in the blanks :

S.no.	Rupee/ Paise	Paise
1)	1 Rupee	100 Paise
2)	5 Rupees	
3)	2 Rupees	
4)	1 Rupee 75 Paise	
5)	8 Rupees 90 Paise	
6)	5 Rupees 15 Paise	
7)	7 Rupees 25 Paise	
8)	8 Rupees 50 Paise	

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Addition and subtraction of money.

Understand how to add and subtract rupee and paise using columns.

Example 1: Add 26 rupees 40 paise and 31 rupees 20 paise.

Rupees	paise
26	40
+ 31	20
57	60

Answer: ₹ 57.60

* Write rupees in rupees column.
* Write paise is paise column.
* Add paise with paise and write the sum in paise column.
* Add rupee with rupee and write the sum in rupee column.

Example 2 :

₹ 42 . 60
\+ ₹ 36 . 00
₹ 78 . 60

* Add the numbers.
* Write the point below point.
* Write the symbol ₹ to the answer.

Example 3 : Subtract 21 rupees 30 paise from 64 rupees 80 paise.

Rupees	paise
64	80
-21	30
43	50

Answer: ₹ 43.50

* Write rupee in rupee column.
* Write paise in paise column.

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Exmple 4 : Subtract ₹ 35.60 from ₹ 80.75

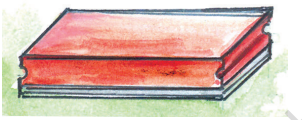
₹ 80 . 75
- ₹ 35 . 60
₹ 45 . 15

* Subtract as you subtract numbers.
* Place point below the point.
* Write the symbol ₹ for the answer.

Observe the given articles and their price.



₹ 2.00



₹ 18.25



₹ 13.75



₹ 40.00



₹ 20.50



₹ 25.50

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You and two of your friends have purchased some items as given above. Observe the price of the article and check whether the sum is correct.

	Rupees	paise
	2	00
+	18	25
	20	25

* Total price of one pencil and one note book.
* Total price of one ink bottle and one note book.
* Find the sum of cost of one ink bottle and one ink pen.

	Rupees	paise
	20	50
+	18	25
	38	75

	Rupees	paise
	20	50
+	25	50
	46	00

Verbal problems

Read the problems given below. Understand how to solve verbal problems.

Example 1

Mary bought one pen for ₹ 10.25 and one note book for ₹ 18.25. How much money did she spend to buy the pen and notebook?

*Amount spent to buy a pen	=	₹ 10 . 25
*Amount spent to buy a book	= +	₹ 18 . 25
*Total amount spent	=	₹ 28 .50

Example 2

Bhavana has ₹ 56.75 in her piggy bank. she added ₹ 43.15 given by her grand father to the piggy bank. what is the total amount of money in the piggy bank?

* Amount in piggy bank	=	₹ 56 . 75
* Amount given by grand father	= +	₹ 43 . 15
* Total amount of money in the piggy bank	=	₹ 99 . 90

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Example 3

Raju has ₹ 85.50. He spent ₹ 25.20 out of it to buy a ball. How much money is remaining with Raju?

* Money Raju had	=	₹ 85 . 50
* Money spent to buy a ball	=	- ₹ 25 . 20
* Money remaining with Raju	=	₹ 60 . 30

When you are solving verbal problems,

1. Write the given information as statements.
2. When you are asked to find the total, perform addition operation.
3. When you have to find how much remains, how much more or how much less, perform subtraction operation.

Exercise 9.4

I. Add the following.

1)

Rupees	Paise
35	67
+ 21	32

2)

Rupees	Paise
44	36
+ 52	61

3)

Rupee	Paise
88	05
+ 11	90

4)

Rupees	Paise
130	20
+ 61	70

5)

Rupee	Paise
200	15
+ 65	32

6)

Rupees	Paise
450	90
+ 35	05

7)

Rupees	Paise
475	00
+ 20	75

8)

Rupees	Paise
820	25
+ 25	50

9)

Rupees	Paise
325	75
+ 25	00

10)

Rupees	Paise
320	25
+ 425	25

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II. Subtract the following.

1)

Rupees	Paise
75	50
-30	15

2)

Rupees	Paise
90	75
-45	25

3)

Rupees	Paise
37	50
-25	30

4)

Rupees	Paise
99	99
-55	55

5)

Rupees	Paise
85	75
_50	65

6)

Rupees	Paise
79	80
- 35	50

7)

Rupees	Paise
120	25
- 50	20

8)

Rupees	Paise
135	80
- 50	75

9)

Rupees	Paise
100	75
- 75	25

10)

Rupees	Paise
75	25
- 50	20

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III. Solve the following verbal problems.

1. If Sanju spent ₹ 19.25 to buy chocolates and ₹ 6.25 to buy biscuits, what is the total amount spent by Sanju?
   * Amount spent to buy chocolates = _____
   * Amount spent to buy biscuits = _____
   * Total amount spent by Sanju = _____

2. Sonali's father gave her ₹ 80 and her mother gave her ₹ 25.25. what is the total amount of money sonali has?
   * Amount given by Sonali's father =
   * Amount given by Sonali's mother = _____
   * Total amount with Sonali = _____

3. Shekar purchased an ice-cream by paying ₹ 7.25 and he also purchased a pen of cost ₹ 5.25. What is the total amount spent by Shekar?

_____

_____

_____

4. Radha won a prize of ₹ 75.50 in a painting competition. She also won a prize of ₹ 20.50 in maths quiz competition. What is the total amount of money won by her ?

_____

_____

_____

5. Manju purchased drawing sheets by paying ₹38.25 and he also purchased crayons by paying ₹ 20.50. What is the amount of money spent by him?

_____

_____

_____

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IV. Solve the following statement problems.

1. Rekha has ₹125.50 and she spent ₹13.75 to buy an ice- cream. How much money is remaining with her?

* Total money with Rekha = _____
* Money spent for ice cream = _____
* Money remaining = _____

2. Shashank has ₹ 125.50, he purchased a doll for his sisiter by paying ₹ 75.25. How much money remains with him?

* Money with Shashank =
* Money spent to purchase a doll =
* Money remaining with him =

3. If Jaya had ₹ 20.00 If she spent ₹15.50 to buy tomato how much money remains with Jaya?

_____

_____

_____

4. You have ₹ 100.75. If you spend ₹ 50.25 to purchase chocolates on your birthday, how much money remains with you?

_____

_____

_____

5. Your father gave ₹ 50.75 to you and ₹ 25.50 to your brother. How much more money did you receive than your brother ?

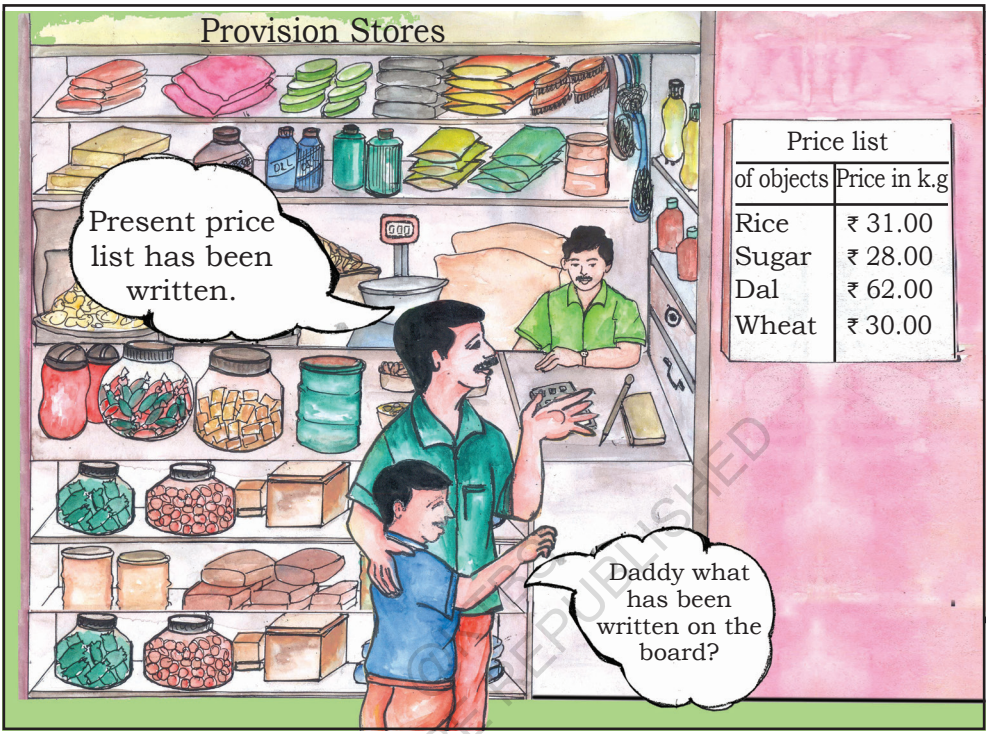
_____

_____

_____

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Price List



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How is it useful?

To know the amount we have to pay. Look cost of 1 kg rice is ₹ 31





You tell me what is the price of 1 kg sugar.

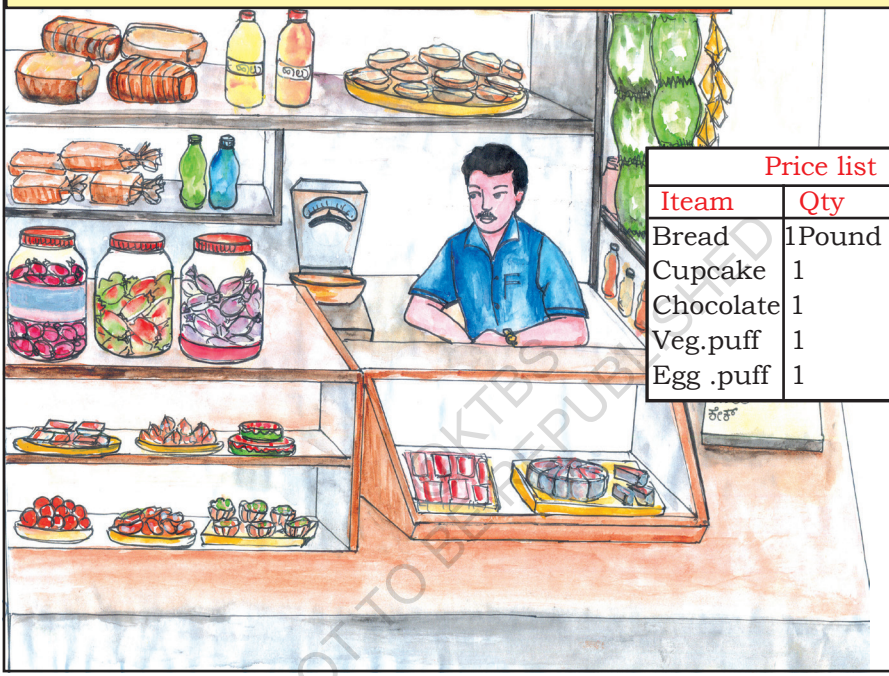
Yes, I know. It is ₹ 28.



Every shop displays a price list. It helps us to know the price of the things that we want to buy from that shop.

Now, look at the price list in this bakery.

Iyangar Bakery



Price list		
Iteam	Qty	Price
Bread	1Pound	₹12.00
Cupcake	1	₹5.50
Chocolate	1	₹2.00
Veg.puff	1	₹10.00
Egg .puff	1	₹11.00

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Preeti visited this bakery. Help her to know the price. She wants to buy following things.

1 Veg puff = _____

1 Pound bread = _____

1 Chocolate = _____

KST No 001234

Receipt CST No 007568

Sri Textiles

M.G. Road Kalaburagi

Bill No : 15702 Date : 10-04-2016

Name : Rajendra

Sl no	Item description	Qty	Rate	Amount
1.	Shirt	1	₹ 250.00	₹ 250.00
2.	Saree	1	₹ 725.00	₹ 725.00
3.	Dress	1	₹ 375.00	₹ 375.00
	Total			₹ 1350.00
	Vat			70.00
				₹ 1420.00
(In words : One thousand Four hundred Twenty only)				
Sign of the shopkeeper :				

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The bill tells us

* Name and address of the shop.
* Receipt number and the date of purchase.
* Name of the customer.
* Details of the items purchased.
* Cost of each item purchased.
* Total amount to be paid is written both in number and words.
* Sign of the shopkeeper.

Imran went to a stationary shop and purchased one 200 pages book, two 100 pages books and 5 pencils. Observe the price list and the bill given by the shopkeeper. Check whether it is correct.

Price list	
Item	**Price per unit**
200 Page book	₹ 30-00
100 Page book	₹ 15-00
Eraser	₹ 5-00
pen	₹ 10-00
Pencil	₹ 4-00

Receipt

Rajaram Book Mart
Shivamogga

KST No 0243
CST No 0456

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Bill No : 453		Date : 15-03-16		
Name : Imran				
Sl.	**Item description**	**Quantity**	**Price per unit**	**Amount**
1	200 Pages note book	1	₹ 30.00	₹ 30.00
2.	100 Pages note book	2	₹ 15.00	₹ 30.00
3.	Pencil	5	₹ 4.00	₹ 20.00
			Vat 4%	₹ 3.20
	Total	-		₹ 83.20

(In words : Eighty three rupees and twenty paise only)

Sign of shopkeeper

Exercise 9.5

Fill in the blanks :

1. The slip we receive from the shopkeeper containing the details of purchase is called a _____

2. The board displayed in a shop showing the price of each item is called _____

3. In a Receipt, the total amount to be paid should be written in numbers and _____

* Observe the Receipt given below and answer the following questions.

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KST No 0453
CST No 06567

Receipt
Jagadamba Textiles
Bengaluru

Bill No : 301 Date : 30-12-15
Name : Parvati

Sl no	Item description	Qty	Price per unit	Amount
1.	Saree	1	₹ 450.00	₹ 450.00
2.	Blouse piece	2	₹ 25.00	₹ 50.00
3.	Hand kerchief	5	₹ 10.00	₹ 50.00
	Vat 4%			22.50
Total				₹ 572.50

(In words : Five hundred seventy two Rupees and fifty paise only)

Sign of the shopkeeper :

1. What is the name of the customer? _____
2. What is the cost of the saree purchased? _____
3. What is the cost of one handkerchief? _____
4. What is the total amount to be paid to the shop keeper? _____
5. What is the Receipt number?_____

Activity: Go through the bills in your house and study the particulars.

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Chapter-10

MEASUREMENT

E8K1W6

After studying this chapter you can

* know the need for a standard unit of measurement,
* select instruments according to measurement,
* learn the use of measuring instruments,
* acquire the skill of measuring objects in centimetre and metre,
* estimate the length of given objects,
* measure estimated length by using a measuring scale,
* find the difference between estimated and actual measurement,
* weigh objects using nonstandard weights,
* know the unit of measuring weight,
* know how to find the capacity of objects using nonstandard units,
* know the unit of measuring volume,
* know how to write day and date using calender,
* acquire the knowledge of finding time nearest to the hour,
* arrange daily events chronologically,

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Preparation for festival



Jyothi goes to market with her father to buy flowers for Gowri-Ganesha festival. She observes as her father buys flowers.

Jyothi : Daddy, see here the flowers are so beautifull

Father : Asks flower seller to give flowers.

Flower vendor : How much shall I give sir?

Father : I want one fathom of flower

Flower vendor's son : Daddy, I will measure the flower with my hand

Father : No, No, let his father measure.

Jyothi : Father, the boy likes to measure, let him do it.

Father : No. Let your father measure.

Jyothi : Father, let him measure.

Father : No child, if his father measures, we get more flowers.

Father: Ok, each of you give one fathom of flower.

Jyothi : How is it? Both father and son will give the same one fathom of flowers.

Father : But, One fathom measured by flower vendor will be more than one fathom measured by his son (by comparing the two)

Jyothi : Oh yes, why didn't I realise this? why don't we use the same device (Scale) so that the measurements are equal.

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Mesurement how ? how much ?

Kumar, Ramya, Salma and John are measuring the black board using handspan.



Teacher : Children, what are you doing?

Students : We are measuring the blackboard by our hand.

Teacher : Are the measurements same?

Students : No sir /(Madam)

Teacher : Take this scale. Now, every one measure the blackboard using the scale and fill this table.

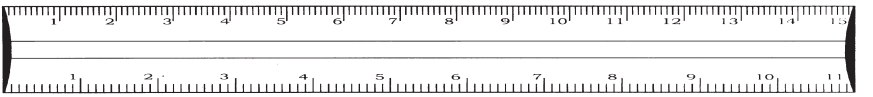
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Name of the students	When measured using scale
Kumar	20 times
Salma	20 times
Ramya	20 times
John	20 times

Observe the measurements. The measures are equal why? Think !

All students have used the same scale hence the measurements are equal

Observe the scale.



The first number in this scale is ☐

The last number in this scale is ☐

The number of long lines in this scale is ☐

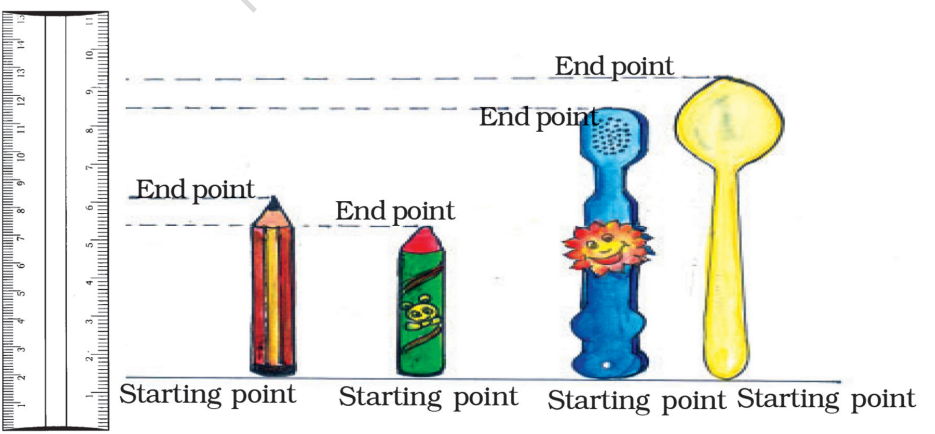
The number of short lines between any two long lines is ☐

Such 9 short lines and 1 long line together form a group of 10 lines. This group of 10 lines is equal to one centimetre. It is written as 1 cm. In a small scale there are 15 such groups. So, a small scale is 15cm long.

We can measure the length of several objects using this scale.

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Observe the picture and learn the method of measuring the length.

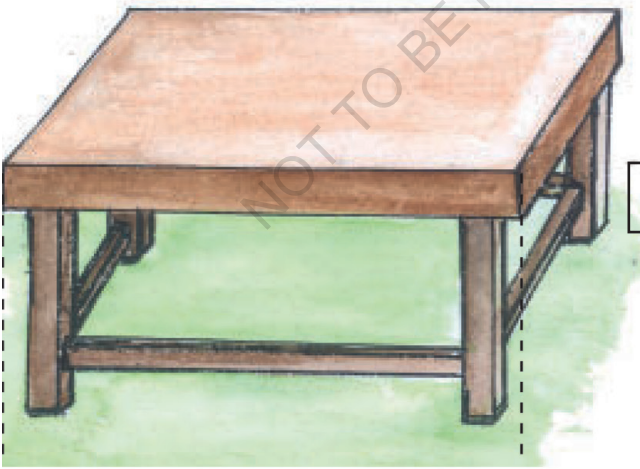


I. Measure the length of the given pictures using a scale and write the length in the space provided.







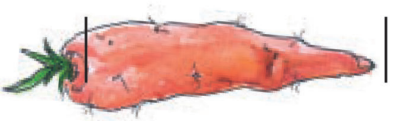




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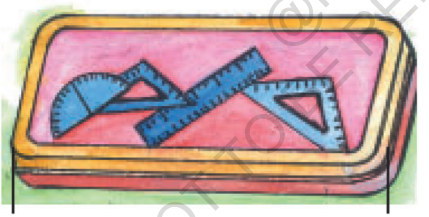
Exercise 10.1

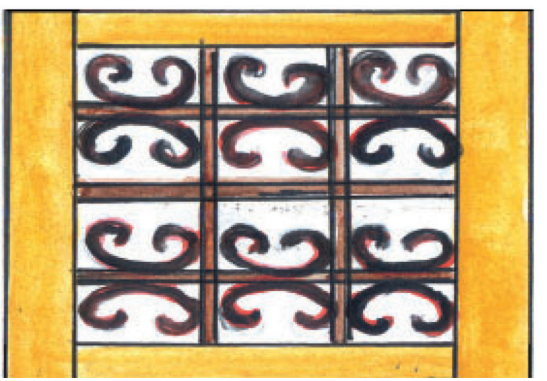
Measure the length of the objects given below in cm and write in the space provided.

1. 

2. 

3. 

4. 

5. 

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6. 

7. 

Metre Scale

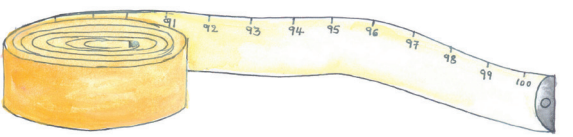


Have you observed the scale used in a cloth shop? They use a bigger scale. Why? Think!

It is not convenient to use a small one to measure longer objects since it takes a long time to measure and becomes very inconvenient. So a bigger scale is used. This bigger scale is called a 'metre scale.'

An one metre scale will be 100 cm long.

So, 1 metre = 100 cm



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Put a ✓ mark for suitable scale to measure the length of objects given below.

Objects	cm scale	Metre scale
Length of a pen	✓	
Length of a class room		
Length of the cricket bat		
Length of the play ground		
Height of a door		✓
Length of a book		
Length of a saree		
Length of an eraser		
Length of a pencil		

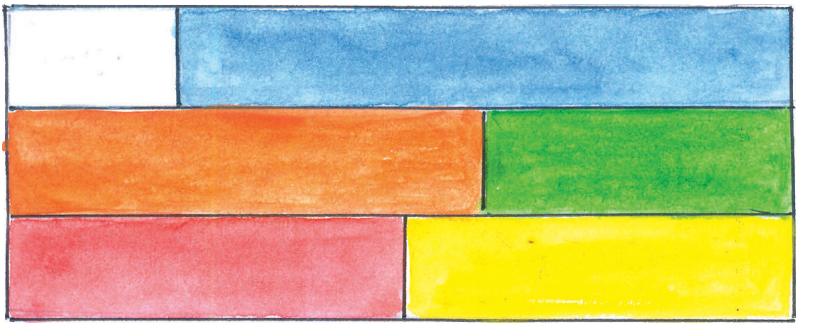
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If available, use a metre scale or use a scale prepared by yourself and measure the following. Record the measures in nearest metre in the space provided.

* Length of the blackboard in the class
* Length of the table in the class
* Length of the bench in the class
* Width of the classroom door
* Distance from your place to the blackboard in the classroom
* Distance between two walls of a room

Exercise 10.2

I. In the picture, measure each coloured strip using a suitable scale and answer the following questions.



Colour	Length in cm
White	
Blue	
Green	
Saffron	
Red	
Yellow	

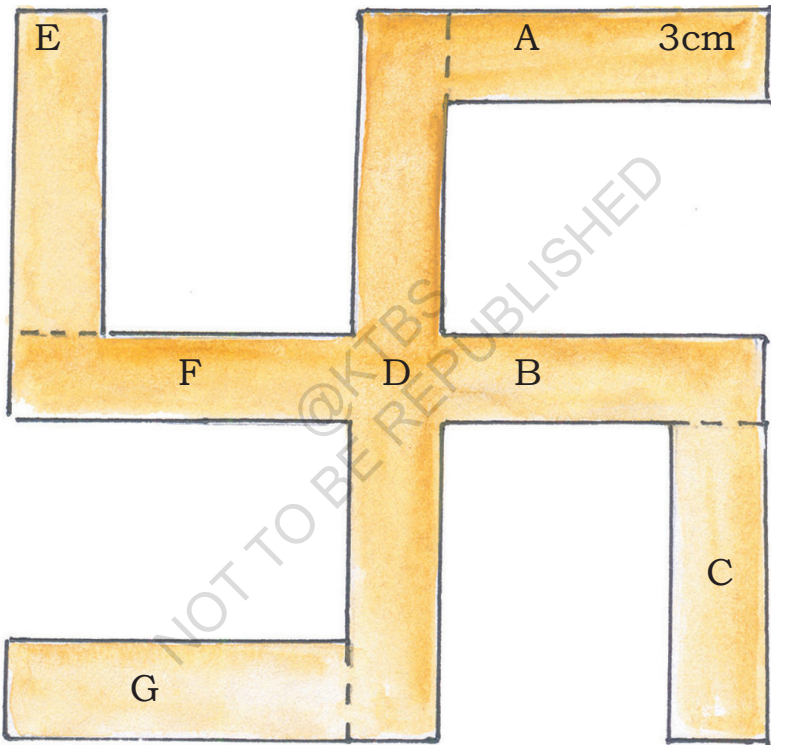
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* The colour strips which are less in length than red strip are _____, _____, _____
* The longest coloured strip is _____
* The shortest coloured strip is _____
* The total length of blue and yellow strips is _____

* If the length of a green strip should be equal to blue strip, it has to be increased by _____

* The difference between the lengths of white and yellow coloured strips is _____

II. In the given picture, measure the sides and record as shown



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III. Measure the length and breadth of your class-room and record it to the nearest metre.

1) Length of the classroom _____

2) Breadth of the classroom _____

Estimate and measure:

Observe the pictures and estimate the length. They check accuracy by measuring it.

* 

Estimated length ☐

Exact length ☐

* 

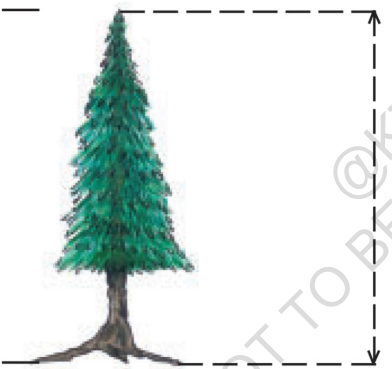
Estimated length ☐

Exact length ☐

*

Estimated length ☐

Exact length ☐

* 

Estimated height ☐

Exact height ☐

* 

Estimated length ☐

Exact length ☐

* 

Estimated length ☐

Exact length ☐

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Estimate the height of 5 of your friends. Then measure and check the accuracy of estimated measurement.

Name of the students	Estimated height	Actual height
1		
2		
3		
4		
5		

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Exercise 10.3

I. Estimate the length of the given lines. Measure and check the length using measuring tape.

1) 

Estimated length ☐ Actual length ☐

2) 

Estimated length ☐ Actual length ☐

3) 

Estimated length ☐ Actual length ☐

4) 

Estimated length ☐ Actual length ☐

5) 

Estimated length ☐ Actual length ☐

II. Estimate the length of objects in your house and check whether your estimation is correct by measuring it.

Example : 1) Door _____ 4) _____

2) Window _____ 5) _____

3) Broom _____ 6) _____

Weight

Who got more?

Deepa and Pushpa are sisters. They both went to a fair with their father. Deepa purchased 1 kilogram laddu, which is her favourite sweet. But Pushpa purchased 1 kilogram of butter biscuits. The packet of biscuits was much bigger than the packet of laddus. Deepa observed this and started to argue with her father that he had bought more for her sister.

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* Is Deepa's argument correct?
* Why Deepa is thinking like that?
* Observe the object marked in the figure.
* For what purpose it is used ?





The device/instrument used to weigh objects in shops and other business places is the weighing mechine.

Use the balance available in your school or borrow a balance from a shop.

Place a chalk box filled with pieces of chalk on one side and go on placing onions on the other side until both their weights become equal. Make a note of number of onions, in the table given. Repeat the above activity with different objects given in the table.

Serial number	Objects	Number of objects
1.	Onion	
2.	Tomato	
3.	Marbles	
4.	Potato	
5.	Books	

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Write 5 situations where the weights are used for measurement.

Example: 1) To weigh vegetables

2) _____

3) _____

4) _____

5) _____

Do by yourself

Place a Bottle filled with water on one side of a balance and place the following objects on the other side and fill in the blanks.

1) Number of onions equal to the weight of bottle ☐
2) Number of marbles equal to the weight of bottle ☐
3) Number of tomatoes equal to weight of bottle ☐
4) Number of bananas equal to weight of bottle ☐
5) Number of brinjals equal to weight of bottle ☐

Exercise 10.4

1) In the given set of objects, put '✓' mark for the object whose weight is more.

1.	Mathematics book	✓	Newspaper
2.	Pen		Geometrical instruments
3.	Wooden chair		Wooden table
4.	Volley ball		Tennis ball
5.	Coconut		Pumpkin

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2) Estimate the weight of the pair of objects in your surroundings and classify them as shown in the table.

	Weight less than 1kg	Weight more than1kg
Ex: 1	Duster	pumpkin
2		
3		
4		

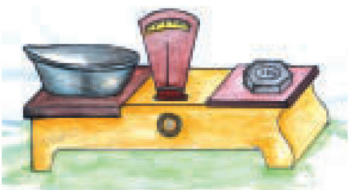
3) Estimate the weight of the following vegetables and arrange them in descending order.

carrot, pumpkin, coconut, chilly

4) You might have seen these different types of balances. Learn who use them.



* People who buy old newspapers.
* .....
* .....



* In provision stores
* .....
* .....



* Vegetable vendors at the market place.
* .....
* .....



* Sweet vendors
* .....
* .....

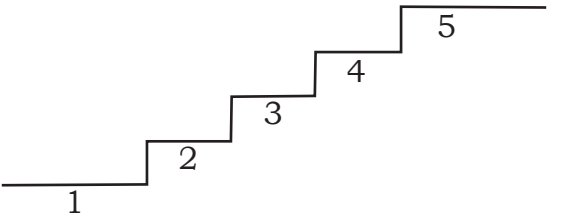


* To know the weight of a person
* .....
* .....

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5) Estimate the weight of the following objects and arrange them in ascending order.

bike, car, bus, cycle, Auto



Activity 1.

Make a list of 5 students who weigh more than you and 5 students who weigh less than you in the given table.

your weight = _____ kg

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More weight:		**Less weight**	
Name of student	weight	Name of student	Weight

Activity 2.

Observe the model and fill in the blanks

Name of objects	More weight	Less Weight
Fruit	water melon	1) _____ 2) _____ 3) _____
Animal	1) _____ 2) _____ 3) _____	deer
Vegetable	cucumber	1) _____ 2) _____ 3) _____
Flower	1) _____ 2) _____ 3) _____	jasmine

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Volume

Write the names of the containers and their uses in the table.



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Serial number	Name of the container	Use
1	Plastic bottle	To carry water during Journey
2		
3		
4		
5		
6		
7		
8		

Observe the given picture. Identify the containers that are numbered.



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Example:

1) Bucket
2)
3)
4)
5)
6)

Observe the use of all the above containers, What is their common use?

All the containers in the above examples are used to store liquid/water. We store liquid/water/according to their volumes.

Let us Learn about the storage capacity of the following objects.

Activity 1 : Take two tumblers of different sizes and fill water into the containers given below and measure their storage capacity.

Name of the container	Capacity in a big glass	Small glass
Capacity of jug	_____ glass	_____ glass
Capacity of plastic bottle	_____ glass	_____ glass
Capacity of steel container	_____ glass	_____ glass

Activity 2: Take two tumblers of different sizes and a container. Fill the container with sand using the big tumbler then empty the container and fill the sand using small tumbler.

Capacity of the container :

In small tumbler = _____ tumblers.

In big tumbler = _____ tumblers.

In the above activitity, you can observe that sand has been filled more number of times with the small tumbler and less number of times with the big tumbler. Why?

When the container is filled with two different measuring instruments, the capacity of the container does not change. Since the capacity of the smaller instrument is less, it is recorded more number of times and the capacity of the bigger instrument is more hence it is recorded less number of times.

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Take a pot and fill it with water using two different size mugs. fill up the following table. Repeat this activity taking bucket, and a small drum.

Name of the object	Small mug	Big mug
Pot	_____ mugs	_____ mugs
Bucket	_____ mugs	_____ mugs
Small drum	_____ mugs	_____ mugs

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Exercise 10.5

Observe the containers given below and answer the questions.



Sintex



Jug



Pot



Glass



Water bottle



Water container

1) The object of least capacity is _____

2) The object of very high capacity is _____

3) The objects having greater capacity than the pot are _____ and _____

4) Objects having capacity more than the bottle and less than the pot are _____ and _____

5) Object having capacity less than the tank and more than the pot is _____

6) Object having capacity more than the tumbler and less than the mug is _____

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Activities :

1) Name different containers used to store drinking water in your house.

2) Check how many pots of water are required to fill the steel drum used to store drinking water in your school.

3) Fill the following table.

Containers used to store liquids	Containers used to store soild things
1)	1)
2)	2)
3)	3)
4)	4)
5)	5)

Time

Observe the calendar of 2016 and answer the questions given below

1) How many Sundays are there in the month of May

2) Identify the date of Sundays in the month of August ?

3) Name the months having 31 days

a) b) c) d)

e) f) g)

4) Name the months having 30 days.

a) b) c) d)

5) Name the month having less than 30 days

_____

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2016

January

Su	Mo	Tu	We	Th	Fr	Sa
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

February

Su	Mo	Tu	We	Th	Fr	Sa
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29					

March

Su	Mo	Tu	We	Th	Fr	Sa
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

April

Su	Mo	Tu	We	Th	Fr	Sa
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

May

Su	Mo	Tu	We	Th	Fr	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

June

Su	Mo	Tu	We	Th	Fr	Sa
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

July

Su	Mo	Tu	We	Th	Fr	Sa
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

August

Su	Mo	Tu	We	Th	Fr	Sa
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

September

Su	Mo	Tu	We	Th	Fr	Sa
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

October

Su	Mo	Tu	We	Th	Fr	Sa
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

November

Su	Mo	Tu	We	Th	Fr	Sa
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

December

Su	Mo	Tu	We	Th	Fr	Sa
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

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Federal Holidays 2016

Jan. 1st	New Year's Day	**July 4th**	Independence Day	**Nov. 24th**	Thanksgiving Day
Jan. 18th	Martin Luther King Day	**Sept. 5th**	Labor Day	**Dec. 25th**	Christmas Day
Feb. 15th	Presidents' Day	**Oct. 10th**	Columbus Day	**Dec. 26th**	Christmas D. (obs.)
May 30th	Memorial Day	**Nov. 11th**	Veterans Day		

The main purpose of the calendar is to help us to mark and note the dates on which a particular event has happened or is going to happen. It is commonly practiced that first we write the day then the month finally the year.

Day/Month year

Example: We write the date of independence as 15/08/1947

Here : 15 → Indicates the day.

08 → Indicates the month.

1947 → Indicates the year.

The day school reopened after holidays is written as : 01/06/2016

01 → Indicates the day.

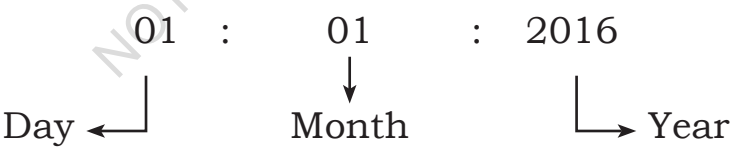
06 → Indicates the month.

2016 → Indicates the year.

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To note any important date in the calender, we have to first note down the year, then the month and finally the day.

Eg : The begining date of 2016



Day is 01; Month is 1, means January, year is 2016

2)The last date of 2016 : 31/12/2016

Year → 2016

Month → 12 means December

Day → 31, The last day

Mark the given festivals by placing a circle round the dates in the calender. Also, write down the dates in the table given below.

Sl. No	Festival	Day	Month	Date
1)	Pongal		January	14
2)	Shivarathri			
3)	Ramzan			
4)	Good Friday			
5)	Gurunanak jayanthi			
6)	Workers Day			
7)	Teacher's Day			
8)	Children's Day			
9)	Gandhi Jayanthi			
10)	Christmas			

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Using a calender, write down the dates of the following celebrations.

Celebrations	Day	Month	Week	Date
Republic day				
Ugadi festival				
Ed Milad				
Ambedkar Jayanthi				
Kanaka Jayanthi				
Basava Jayanthi				
Independence Day				
Karnataka Rajyoshthova				
Diwali				
Bakrid				

Activity :

1) **Take a calender and write down all the red-coloured dates in the table below.**

Day	Month	Week	Date

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2) **Write your date of birth : Day: ___ Month: __ Year**

3) **In present year's calender, mark the birthdays of your 8 friends by writing their names against the dates.**

Name of friend	Birth day date	Month	Year

My Time

My sisiter Mamatha's, daily routine:

My sisiter Mamatha is studying in 10th standard. She gets up at **5 o'** clock in the morning every day. She washes her face and sits for study at 5.30 a.m. She studies maths, science and English till **8 o'** clock. Then, she reads the newspaper and tells the news to everyone in the family. Then, she goes to the kitchen to help mother. After that, she finishes her bath, pooja and breakfast and gets ready to school. Exactly at **9 o'** clock she leaves the house with her friends to her school which is 3 km away from her house. She reaches the school by 9:30. Then she waters the plants in the school garden along with her friends. School bell rings at **10 o'** clock. She attends the prayer with her friends. She also plays games and participates in the competitions. she returns home at **5** in the evening. She plays for 1 hour, She cleans the house within **20** minutes. She starts study at **6:30** She studies kannada and social science upto **8 o'** clock, she watches the news on T.V, exactly at **8 o'** clock and goes back to study at 8.30 She studies Hindi till **9:30**. Then, She finishes her dinner and goes to bed at night **10 o'** clock.

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Observe Mamatha's daily activites and fill in the blanks :

1) Mamatha gets up in the morining at _____
2) In the morning, she studies till _____ time
3) She leaves her house for the school at _____
4) Mamatha reaches school at _____
5) In the school, bell rings at _____
6) The prayer is for _____ time
7) She returns to home at _____
8) In the evening, she starts her studies at _____
9) She sleeps at _____ in the night.

Measuring Time



I am an instrument to measure time. I am called a clock or watch. My main purpose is to show time to everyone.

Two of my assistants work continuously to help me to show you time. The bigger one shows minutes. He is called minute hand or big hand. The other one is small. He shows hours. He is called hours hand or small hand. Both of them together help in showing time.

I have 12 equal parts. Each part is shown by a big line. These parts are marked using the numbers 1,2,3,4,5,6,7,8,9,10,11,12. They show hours.

There are small lines between two big lines. These lines show minutes.

If the bigger one crosses all the lines and finishes one complete round, he would have crossed 60 minute lines. At the same time, the smaller one will cross one big line.

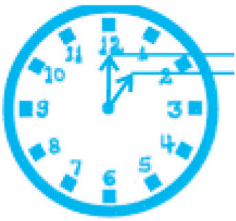
Thus,

60 minutes = 1 hour

Every time the bigger hand crosses 60 small lines, the smaller hand will move to the next number (hour)

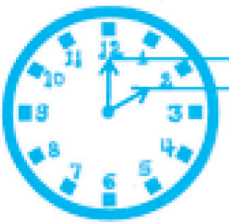
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See the hands and know the time :



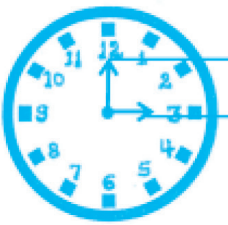
Big hand is on 12
Small hand is on 1

Now, the time is 1 o'clock



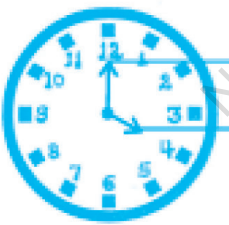
Big hand is on 12
Small hand is on 2

Now, the time is 2 o'clock



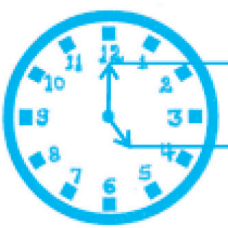
Big hand is on 12
Small hand is on 3

Now, the time is 3 o'clock



Big hand is on 12
Small hand is on 4

Now, the time is 4 o'clock

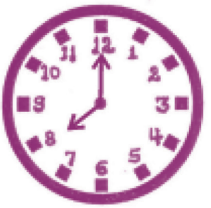


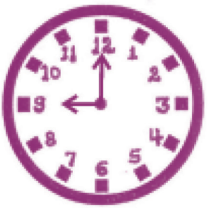
Big hand is on 12
Small hand is on 5

Now, the time is 5 o'clock

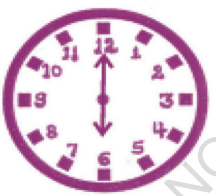
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Look at the pictures given below, fill in the blanks with correct time :









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What is the time now?



The small hand has crossed 1 and is near 2. The time is approximately 2 0'clock.



The small hand has crossed 3 but still, it is near 3 only. So, the time is approximately 3 0'clock.



Small hand has crossed 5 and is closer to 6

So, the time is approximately 6 0' clock



The small hand has crossed 9 but it is closer to 9 only.

So, it is approximately 9 o' clock

Observe the clock. Fill in the blank with time, approximating to the nearest hour.



The approximate time is .....



The approximate time is .....



The approximate time is .....



The approximate time is .....

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Do and learn : With the help of a clock having small and big hands by rotating the big hand observe the movement of small hand.

Arrange chronologically:

Acivity : Veeraiah is a successful farmer. Everyday, he wakes up at 6:00 in the morning. Till 7:30 in the morning, he cleans his cowshed. By 8:30 he finishes his bath and worship. He takes breakfast at 9:00. Then, he goes to his farm and works there till 1 o' clock in the afternoon. He takes his lunch and rests under a tree. At 3 o' clock he goes to his garden. He completes all his work and returns home at 5:30 in the evening. He refreshes himself and shares all his experiences with his family. At 8:30 in the night he has dinner. Then, he sits outside his house and discusses various topics like rain, crops and many other things with his fellow farmers. Then, the tired Veeraiah goes to bed at 10:30.

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By studying Veeraiah's daily activities, fill the following blanks :

- **Example:** Wakes up at morning 6:00 O'clock.
- _____ morning 8:30.
- _____ morning 9:00 0'clock.
- Works in the field at _____.
- Goes to his garden at _____.
- _____ Evening 5:30.
- _____ Night 10:30.

Activity 2 : Savitha has prepared a list of her daily activities. Column A contains a list of her activities Match this with the time in column B

A		B
1)	Wakes up from bed.	Morning 9:30
2)	takes bath.	Morning 6:00
3)	Goes to school.	Afternoon 3:00
4)	Lunch time in school.	Morning 7:00
5)	Playing time in school.	Night 10:00
6)	Leaves school.	Evening 6:00
7)	Study time in the evening.	Afternoon 1:30
8)	Sleeping time in the night.	Evening 4:30

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Activity 3 :

After returning from her holidays, Reshma tells her friend about the trip she had the previous week. She explains it as follows: "I and My parents returned from the trip on Sunday, We saw the new city of Bagalkot (Navanagar) on Wednesday. I saw the Gol Gumbez of Vijayapur on Saturday. On Monday, the first day of our trip, we saw the caves of Badami. On Thursday, we went to Kudalasangama we spent Tuesday visiting Ihole pattadakal which is 90 kms away from kudalasangama. The whole of Friday we spent good time at Alamathi Dam and the surrounding beautiful gardens"

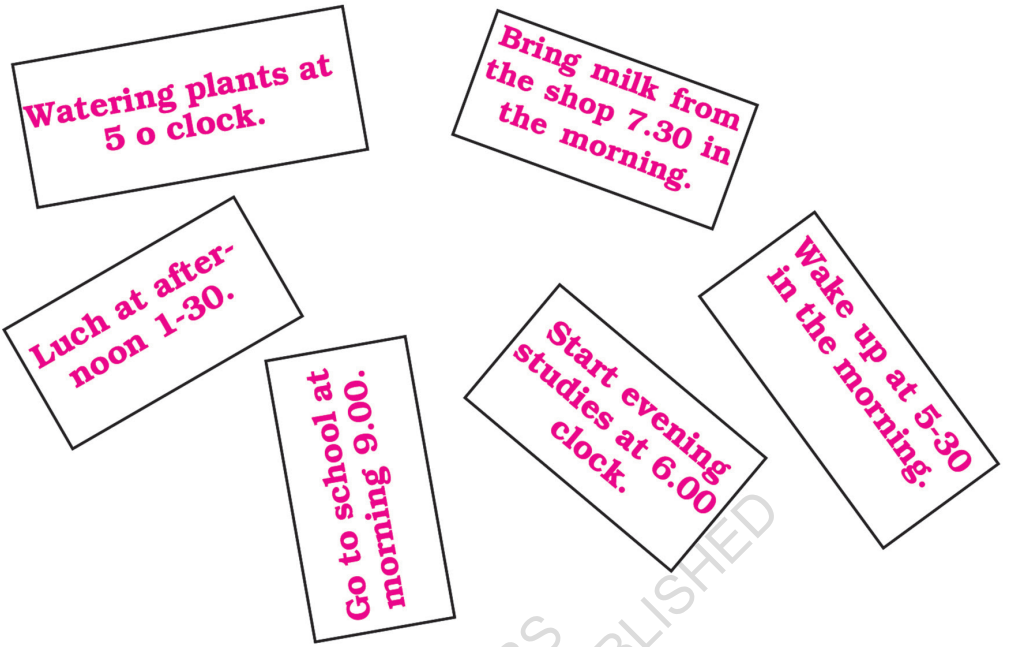
Fill the table below with what Reshma saw during her trip

Description of the tour	Day
Opening day of the tour	
Day of visit to Ihole and Pattada Kallu	
Visit to Navanagara	
Visit to Kudalasangama	
Visit to Alamtti Dam	
Visit to Golgumbaz	
Last day of the trip	

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Activity 4 :

One day Rashid's mother went to her village before Rashid came from his school. She had written the job Charts to be done by Rashid, the next day on cards in an arranged manner. Accidentally it fell down. Please help Rashid to arrange them in chronological order.



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1) ☐ 1) ☐

2) ☐ 2) ☐

3) ☐ 3) ☐

Activity 5 :

Write your daily dairy systematically.

Chapter-11

DATA HANDLING

U4C3S1

After studying this chapter you can

- record data using tally marks,
- draw inference by analysing the data in the form of tallies,
- represent the data by a pictograph using proper scale,
- analyse and interpret the data in the pictograph.

Have you ever been to a zoo? Then, you might have seen different animals there. The picture of few animals are given, observe them.



In the given Picture :

- Number of giraffes ☐
- Number of tigers ☐
- Number of elephants ☐
- Number of deer ☐

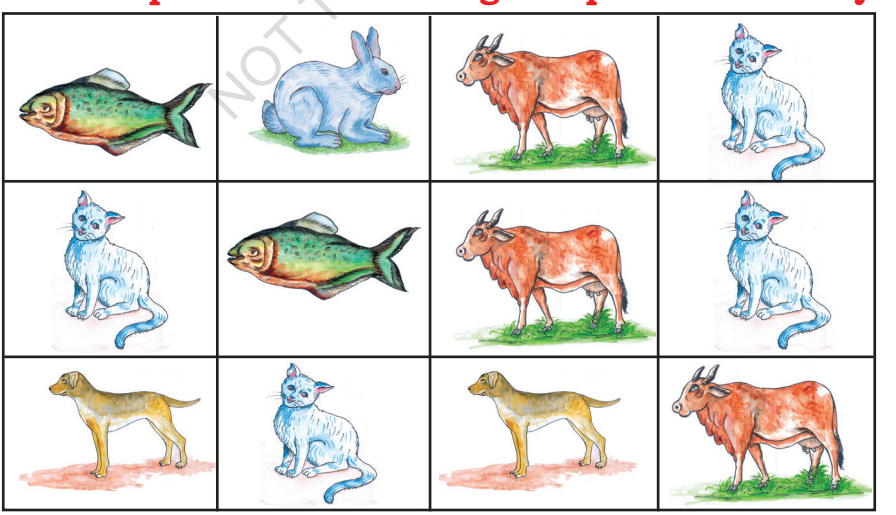
Now, fill the below table

Name of the Animal	Number of animals
Tiger	
Elephant	
Giraffe	
Deer	

From the given picture :

* The animal which is less in number is _____
* The animal which is more in number is _____
* The number of elephants exceeding the number of Giraffes are _____
* The number of tigers less than the number of deer is _____
* The total number of animals is _____

Observe the pet animals in the given picture carefully.



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* Against each animals, draw tally corresponding to every single animal

Pet Animals	Tally marks (1 tally for one time)
Fish	||
Rabbit	|
Cow	
Cat	
Dog	

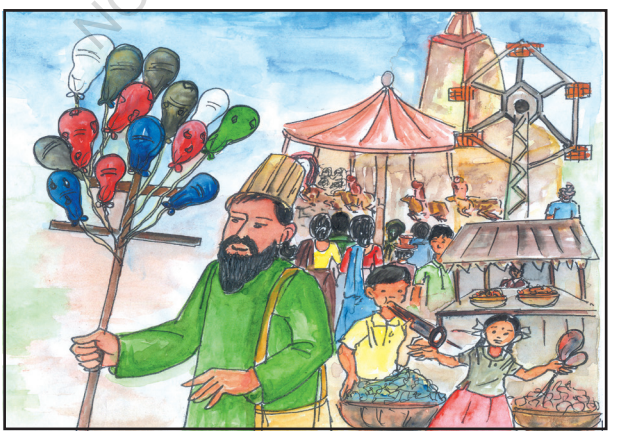
* Verify whether the number of tallies corresponds to the number of animals.

Collected data/events are marked in table and can be verified.

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Look at the balloons and put tallies :

Have you ever been to a fair? There, you would have seen people selling coloured balloons. One such seller is shown below.



* **By looking at the colour of the balloons given in the above picture, Fill in the blanks using tally marks.**

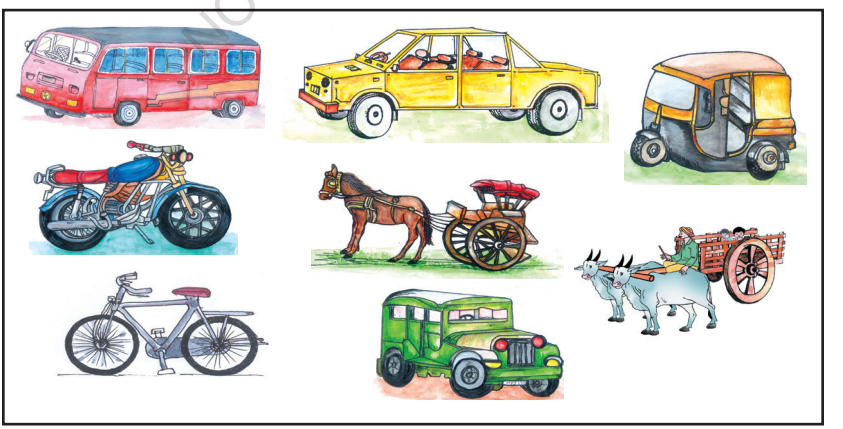
Balloons	Tallies
Red	
Blue	
Green	
White	
Others	

Answer the questions given below :

* Colour of the balloons which is more in number ___
* Colour of the balloons which is less in number _____
* Total number of red and green balloons _____
* Total number of balloons with the balloon seller _____

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Observe the vehicles given above and fill the following table :



Vehicles	Tallies
Two-wheeler	
Three-wheeler	
Four-wheeler	

* Number of two-wheeler vehicles ☐
* Number of three-wheeler vehicles ☐
* Number of four-wheeler vehicles ☐
* Number of two-wheelers more than the number of three wheelers are ☐
* Number of four-wheelers less than the number of two-wheelers are ☐

Analysis of data and Interpretation.

Observe the table given below and answer the following questions :

Flowers	Tallies
Rose	||
Tulip	|||
Hibiscus	|
Jasmine	||||

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Number of Jasmine flowers 4 (Number of Tallies =4)

* Number of Rose flowers _____
* Number of Tulips _____
* The flower which is more in number _____
* The flower which is least in number _____
* Number of Jasmine flower exceeding the number of roses _____
* Total number of flowers _____

Learn from the picture graph

Given below is a list showing the number of students attendence from first to fifth standard in Goverment Higher Primary school, Bagalkot.

Attendance List

Date : 1-6-2013

Class	Total number of students	Number of students present	Number of students absent
1st	22	18	4
2nd	23	20	3
3rd	20	17	3
4th	18	17	1
5th	17	15	2
Total	100		

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From the above list :

* Number of students present in the school ☐
* Number of students absent from the school ☐
* Total number of students in the school ☐

Class Number of students absent

1st	
2nd	
3rd	
4th	
5th	

 = represent one student

Represent the number of absentees in the remaining classes in the pictograph as

Observe the pictograph and fill in the blanks.

* The class having maximum number of absentees _____
* The class having least number of absentees _____
* Number of students absent in 5th standard _____

Given below is a pictograph showing the plants grown by the students of Government Higher primary school Simikeri :

Class	plants grown
3rd	
4th	
5th	
6th	
7th	

 - represent 2 plants

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Now, observe, this pictograph and answer the following questions :

Example : Number of plants grown by the students of 3rd standard 6

* Number of plants grown by the students of 4th standard ☐
* Number of plants grown by the students of 6th standard exceeding the plants grown by 7th standard class students
* Class, which has grown less number of plants ☐
* Class, which has grown more number of Plants ☐

Remember:

* **Observe the given data.**
* **Mark tallies according to the observed data.**
* **Draw a pictograph using proper scale.**

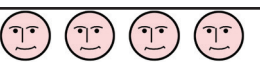
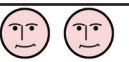
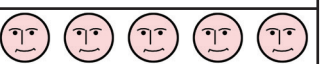
Exercise 11.1

1. Use the first letters of the days of the week Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, Saturday. Mark tallies to show how many times each letter is repeated?

First letter of the Days of the week	Tallies
S	
M	
T	
W	
T	
F	

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2. Observe the pictograph given below and answer the questions that follow:

Games	Interested students
Cricket	
Kabaddi	
Throw-ball	
Basket-ball	
Foot-ball	

 = represents 2 students

* Number of students who like cricket _____
* Number of students who like Kabaddi _____
* Number of students who like Throw ball _____
* The game which is liked by maximum number of student is_____
* The game which is liked by minimum number of students is _____

3. Column A has ridge guard, ladies finger, ball, Idli, apple, bat, mango, dosa, top, vada, pumpkin, kesaribath related items. Column B has the respective data tallies. Match them

'A'	'B'
1. Vegetables	I
2. Fruits	III
3. Food itemsa	I
4. Sports goods	IIII
	III

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4. Collect details of the students of your class who celebrate their birthday in which month of the year and represent it by a pictograph.

January	February	March	April	May	June	July	August	September	October	November	December

5. Given below is a list of sweets, which the students of 3rd standard like. Observe the tally table and answer the following questions.

Sweets	Tallymarks
Kesri Bath	II
Mysore Pak	III
Jilebi	IIII
Dharwad peda	IIII
Laddu	II

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* Number of students who like kesri bath ☐
* Number of students who like jilebi ☐
* Number of students who like mysore pak ☐
* Number of students who like dharwad peda ☐
* Number of students who like laddu ☐

Chapter-12

PATTERNS

F2K7S8

After studying this chapter you

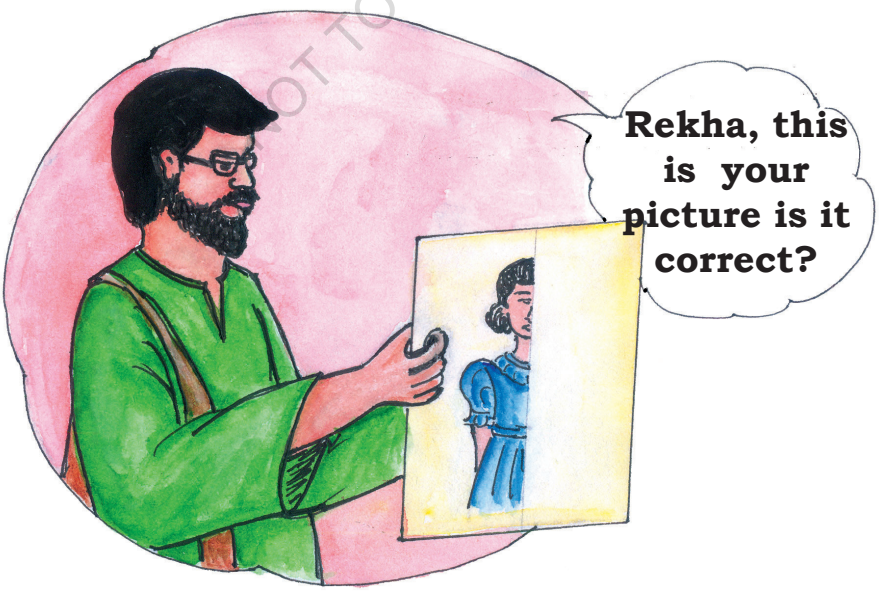
* identify the simple symmetrical shapes and patterns,
* make patterns and designs from straight lines and other geometrical shapes,
* identify odd and even number patterns along with additional operation,
  identify different number patterns.
* identify patterns of objects based on shape colour and size in their surroundings,
* identify patterns in multiplication tables.

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Tit for tat

One day Rekha met an artist.





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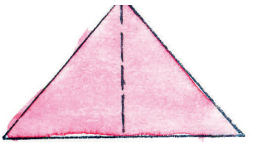
Rekha gave him one hundred rupee note.



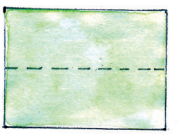


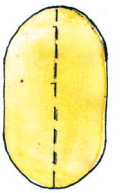
Simple symmetrical shapes and patterns:

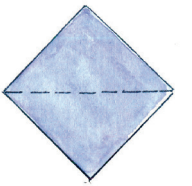
Observe the pictures. Write 'yes' if the dotted lines divide the picture into two equal halves other wise write 'No'.



yes





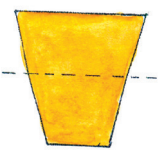


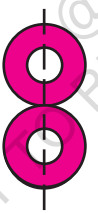




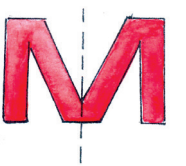


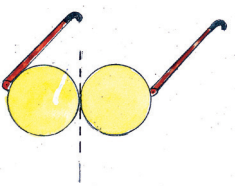


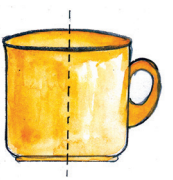


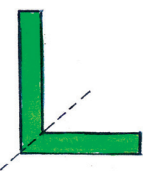


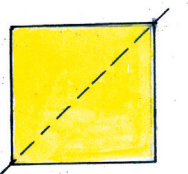








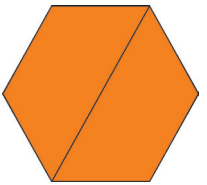




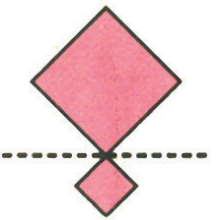
Symmetry means dividing an image into 2 halves to form two mirror images.

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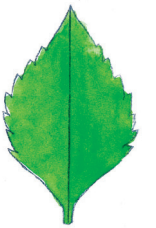
Draw the symmetrical figures as given in the example.

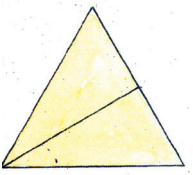


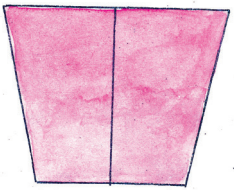
Yes

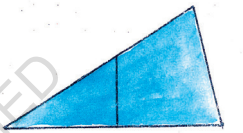


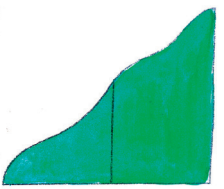
-No

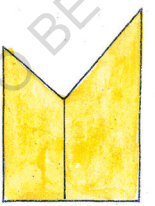


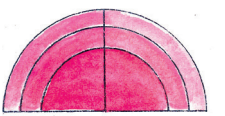








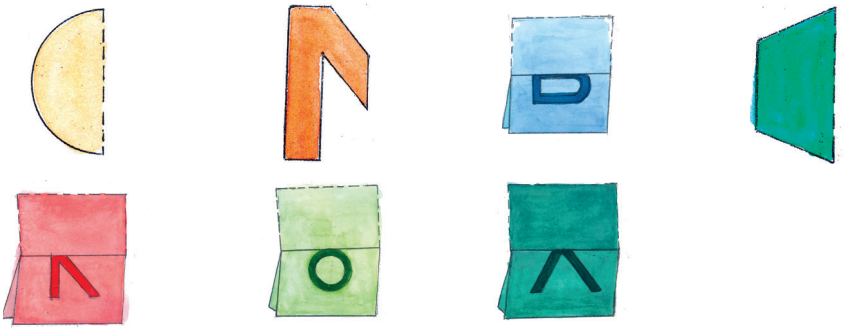






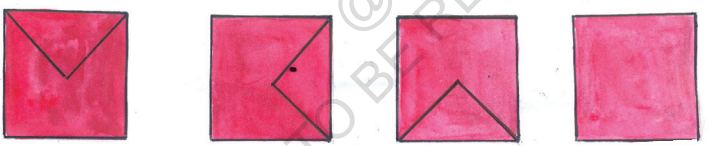
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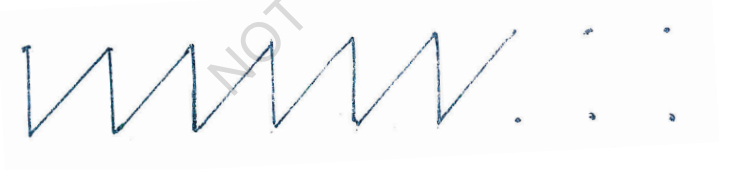
Observe the following patterns and complete it.

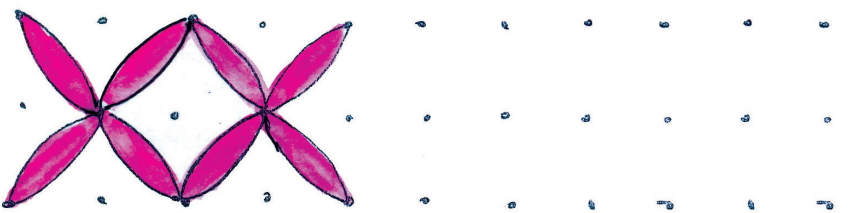


Some patterns are given below, understand the pattern and complete the following by drawing the next one.







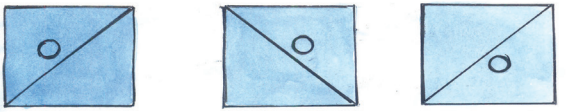


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Some patterns are given below, understand the pattern and complete the pattern by drawing the picture.



.....



.....



.....

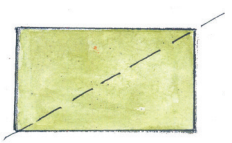
By joining the repeated geometrical objects in a particular order, we get geometrical patterns.

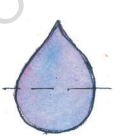
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Exercise 12.1

I.

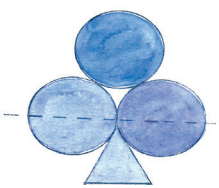
1. Some figures are given below. Write 'Yes' for the symmetrical figures and 'No' for the non- symmetrical ones.









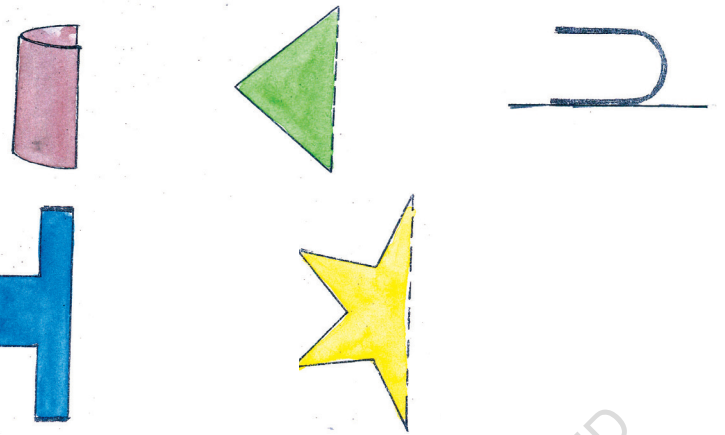




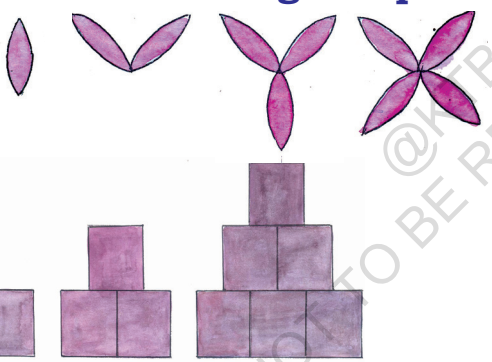




2. Draw the remaining half of the given symmetrical figures :

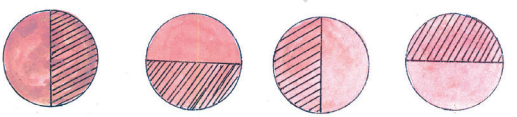


3. Continue the given patterns :

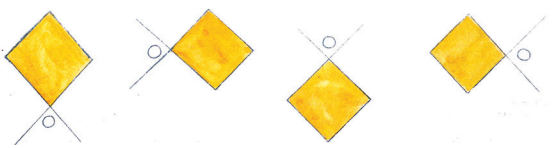


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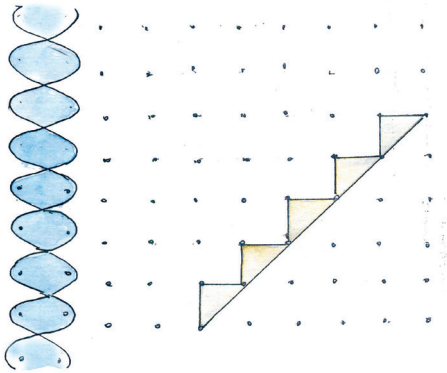


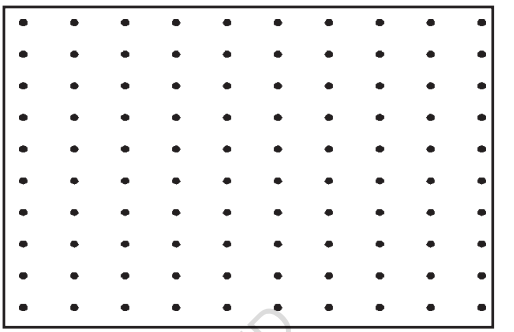
.....

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II. Draw different designs and patterns using straight lines, and curved lines, obeserve the pattern.

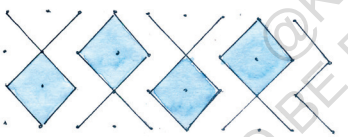
Observe the picture design and copy the same in the space provided.

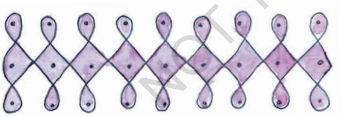




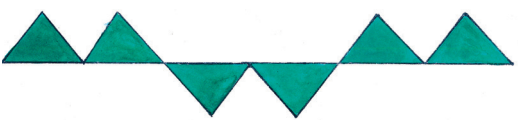
*** copy the same design.**

III. observe, understand and continue patterns given below.

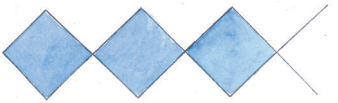
1)  .....

2)  .....

IV. Using the dot grid draw the patterns you know

1)  .....

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2) 

.....

V. Using dots draw any design of your choice.

VI. Using dots draw the designs as instructed.

1) Kite

2) Leaf

3) Boat

4) Star

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Number patterns formed by odd and even numbers.

Number Table from 1 to 100

1	11	21	31	41	51	61	71	81	91
2	12	22	32	42	52	62	72	82	92
3	13	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

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We can form different number patterns from the rows and columns.

Example :

1, 2, 3, 4, 5, 6, 7, ..., ..., ...

Numbers in the column increases by 1

Example :

1, 11, 21, 31, 41, 51, ..., ..., ..., ...,

Numbers in the row increases by 10

Example :

* Observe the sum obtained by adding the consecutive numbers in rows

1 + 2 + 3 + 4 + 5 + ... + ... + ... +..... + 10 = 55

11 + 12 + 13 + 14 + 15 + ... + ... + ... +.... + 20 = 155

21 + 22 + 23 + 24 + 25 + ... + ... + ... +..... + 30 = 255

31 + 32 + 33 + 34 + 35 + ... + ... + ... +..... + 40 = 355

..., + ..., +...., +....., + ..., + ..., + ..., + ..., + ..., = ...

...., + ..., + ..., + ..., + ..., + ..., + ..., + ..., + ..., = ...

....., + ..., + ..., + ..., + ..., + ..., + ..., + ..., + ..., = ...

...., + ..., + ..., + ..., + ..., + ..., + ..., + ..., + ..., = ...

...., + ..., + ..., + ..., + ..., + ..., + ..., + ..., + ..., = ...

91 + 92 + 93 + 94 + 95 + ... + ... + ... + ... + 100 = 955

Number pattern can be constructed like this,

55, 155, 255, 355, 455, ..., ..., ...

In this pattern the numbers, increase by 100.

Example :

* Observe, the sum obtained by adding the ten numbers of the rows

1 + 11 + 21 + 31 + 41 + ... + ... + ... +..... + 91 = 460

2 + 12 + 22 + 32 + 42 + ... + ... + ... +..... + 92 = 470

3 + 13 + 23 + 33 + 43 + ... + ... + ... +..... + 93 = 480

..... = ...

..... = ...

..... = ...

..... = ...

..... = ...

9+19+29+39+49+ 59+69+79+89+99 = 540

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Sum of ten number of the rows are like this.

460, 470, 480, 490, 500, 510, ...

In this pattern, the numbers are increasing by 10.

Example :

1, 11, 21, 31, 41, ..., ..., ...

Example:

Number in the Second column end with 2.

The Unit place of all numbers in this column is two

2, 12, 22, 32, 42, ..., ..., ...

The numbers in the second column ends with 2

The same rule applies to the remaining columns also.

Example:

Observe the following patterns :

1, 3, 5, 7, 9, 11, ..., ..., ...

51, 53, 55, 57, 59, ..., ..., ...

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

50, 52, 54, 56, 58, ..., ..., ...

We get this pattern by adding 2 to the previous number.

Example :

1, 4, 7, 10, 13, 16, ..., ..., ...

2, 5, 8, 11, 14, 17, ..., ..., ...

We get this pattern by adding 3 to the previous number.

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* Number patterns can be formed by arranging the numbers in a particular way.
* Patterns having odd numbers are called odd numbers patterns; patterns having even numbers are called even number patterns.
* By adding 2 to odd numbers we get odd number patterns.
* By adding 2 to even numbers, we get even number patterns.

Example :

This patterns is obtained by adding consecutive numbers.

1 + 2 = 3	1 + 2 + 3 = 6	1 + 2 + 3 + 4 = 10
2 + 3 = 5	2 + 3 + 4 = 9	2 + 3 + 4 + 5 = 14
3 + 4 = 7	3 + 4 + 5 = 12	3 + 4 + 5 + 6 = 18
4 + 5 = 9	4 + 5 + 6 = 15	4 + 5 + 6 + 7 = 22
5 + 6 = 11	5 + 6 + 7 = 18	5 + 6 + 7 + 8 = 26

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Observe the pattern and fill up the blanks.

3, 5, 7, 9, 11, ..., ..., ...,

6, 9, 12, 15, 18, ..., ..., ...,

10, 14, 18, 22, 26, ..., ..., ...,

* We get this pattern by adding any three consecutive numbers.
* This pattern is obtained by adding any three consecutive numbers.
* Pattern obtained by adding two consecutive number increases by two.
* Pattern obtained by adding 3,4 consecutive number increases by three and four.
* Sum of 4 consecutive numbers is twice the sum of the two numbers in the middle.

Execrise - 12.2

I Complete the following number patterns :

1) 11, 12, 13, 14, ..., ..., ...,

2) 71, 81, 91, 101, ..., ..., ...,

3) 7, 17, 27, 37, ..., ..., ...,

4) 31, 33, 35, 37, ..., ..., ...,

5) 20, 23, 26, 29, ..., ..., ...,

6) 21, 23, 25, 27, ..., ..., ...,

7) 10, 12, 14, 16, ..., ..., ...,

8) 55, 155, 255, 355, ..., ..., ...,

9) 490, 500, 510, 520, ..., ..., ...,

10) 5, 8, 11, 14, 17, ..., ..., ...,

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II Write the constructed logic for the following patterns as shown below.

Model: 11, 12, 13, 14, 15, ..., ..., ...,

Constructed logic: Numbers increase by 1 in pattern.

1) 2, 12, 22, 32, ..., ..., ...,

Logic:

2) 10, 12, 14, 16. 18, ..., ..., ...,

Logic :

3) 5, 10, 15, 20, 25, ..., ..., ...,

Logic :

4) 44, 144, 244, 344, ..., ..., ...,

Logic :

5) 11, 13, 15, 17, ..., ..., ...,

Logic :

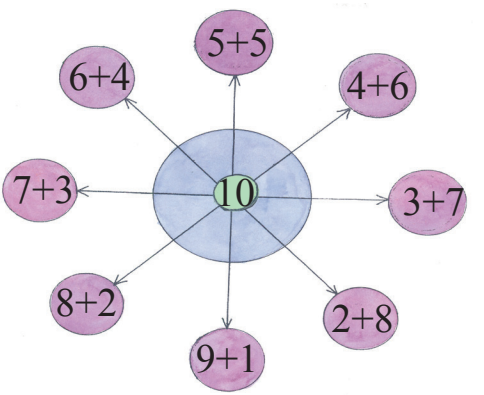
III Fill in the blanks :

1) A _____ is formed by arranging the num bers in a particular way.
2) Patterns having odd numbers are called _____ patterns.
3) 10, 13, 16, 19, ..., ..., ...
4) 40, 50, 60, ..., ..., ..., ...
5) 7, 17, 27, ..., ..., ..., ...
6) 9, 12, 15, ..., ..., ..., ...
7) 10, 12, 14, ..., ..., ..., ...

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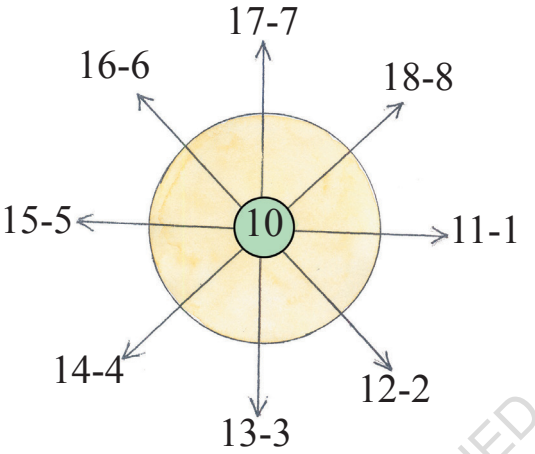
Different types of number patterns :

Observe the following number picture and try to learn how the numbers are split.



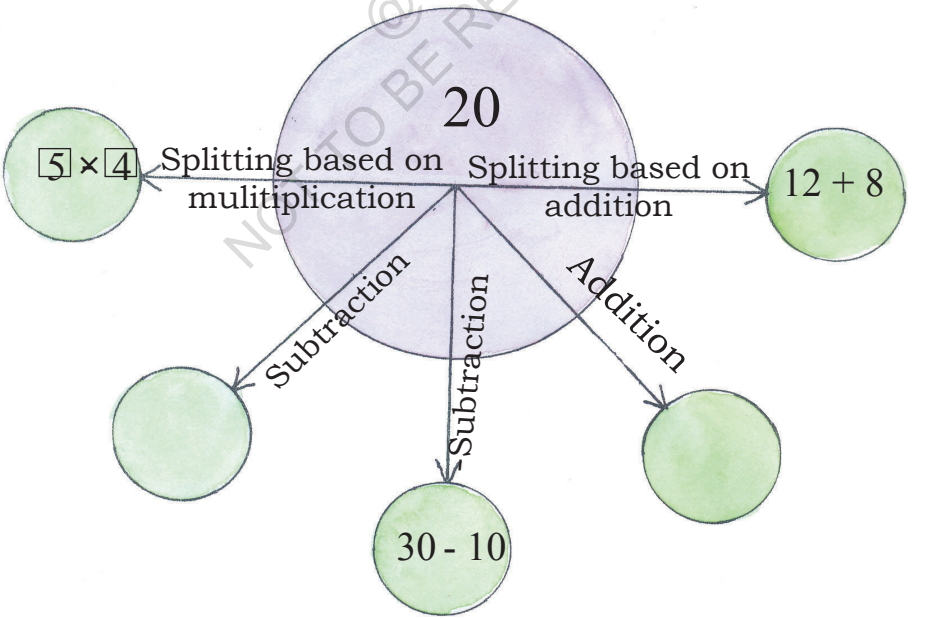
The number pattern obtained is as follows.

9 + 1, 8 + 2, 7 + 3, 6 + 4, ..., ...,



Fill in the blanks by knowing the rule used

11-1, 12-2, 13-3, 14-4, 15-5, ..., ..., ...,



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Understand the spliting of number by addition and fill up blanks.

15 = 8 + 7, 9 + 6, 10 + 5, 11 + 4, ..., ...

25 = 12 + 13, 13 + 12, 14 + 11, 15 + 10, ..., ...

40 = 20 + 20, 21 + 19, 22 + 18, 23 + 17, ..., ...

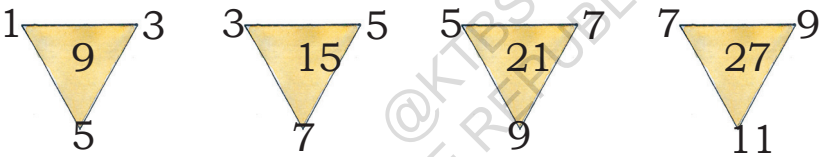
Understand the splitting pattern of number by substracting.

30=60-30, 70-40, 80 - 50, 90-60, ..., ..., ...

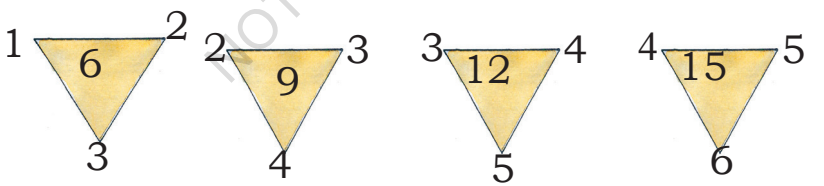
40 = 50-10, 60-20, 70 - 30, 80-40, ..., ..., ...

Number patterns pictorial form

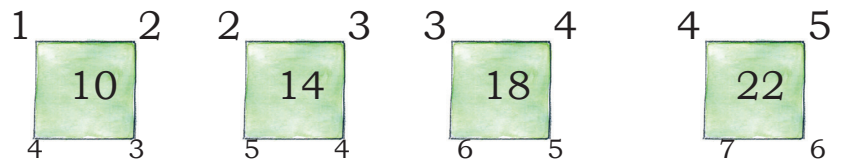
Learn the following patterns

1) 

This is a pattern obtained by adding three consecutive odd numbers.

2) 

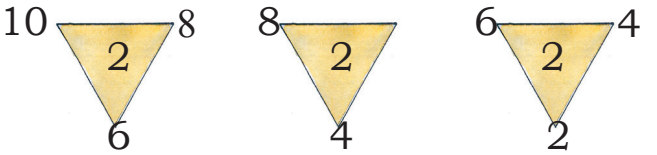
This is a pattern obtained by adding three consecutive numbers.

3) 

Pattern obained by adding four consecutive numbers.

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4) Patterns obtained by the difference of any two consecutive even numbers.

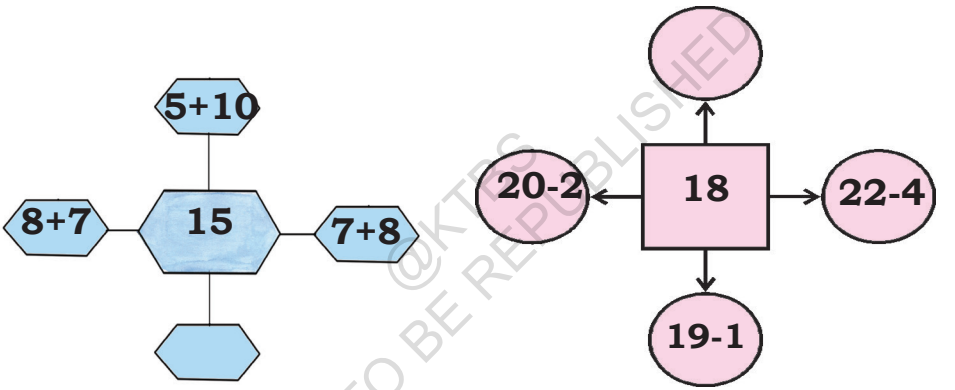


10-8 = 2

8 - 6 = 2

Exercise 12.3

I. Fill the boxes with suitable numbers.



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For each of the given number write the three number division form of addition.

1) 35 = 17 + 18, ..., ..., ...

2) 40 = 20 + 20, ..., ..., ...

3) 45 = 25 + 20, ..., ..., ...

4) 50 = 25 + 25, ..., ..., ...

5) 55 = 30 + 25, ..., ..., ...

II. For each given number, write the division form of subtraction.

1) 25 = 50 - 25, 60 - 35, ..., ..., ...

2) 35 = 100 - 65, 90 - 55, ..., ..., ...

3) 45 = 55 - 10, ..., ..., ...

4) 50 = 100 - 50, ..., ..., ...

5) 60 = 70 - 10, ..., ..., ...

III. Complete the following division patterns

1) 10 + 10, 9 + 11, 8 + 12, ..., ..., ...

2) 13 + 12, 14 + 11, 15 + 10, ..., ..., ...

3) 15 + 10, 14 + 11, 13 + 12, ..., ..., ...

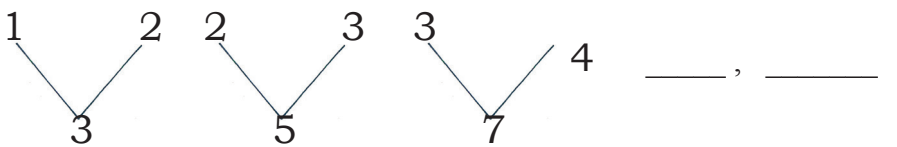
4) 30 - 5, 35 - 10, 40 - 15, ..., ..., ...

5) 100 - 10, 110 - 20, 120 - 30, ..., ..., ...

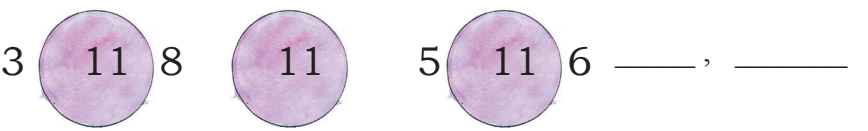
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IV. Complete the number patterns of pictorial form.

1)



2)

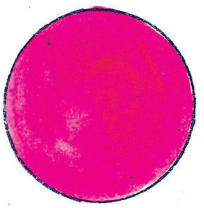


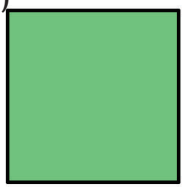
3)

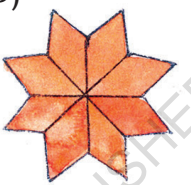
	16			14			12	
12	2	10	10	2	8	8	2	6
	14			12			10	

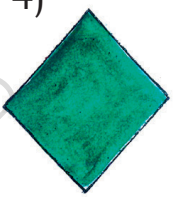
Different patterns around us according to shapes, colour, size

Observe the patterns of different designing tiles.

1) 

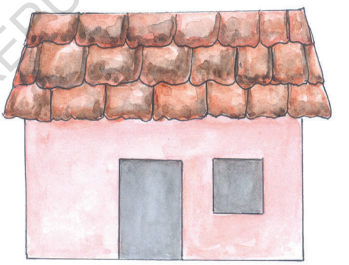
2) 

3) 

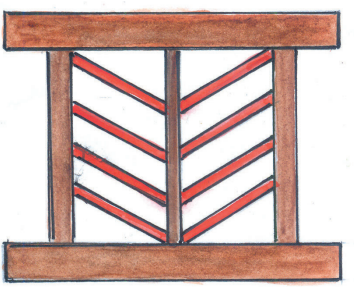
4) 

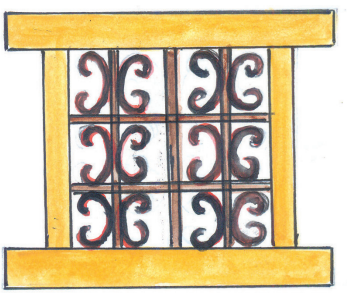
Observe the designs of the house roofs.





Observe the different designs of the windows.

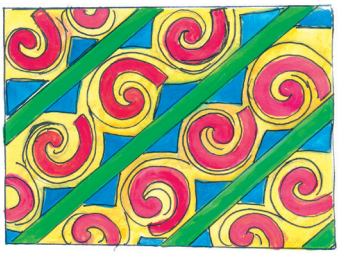
1) 

2) 

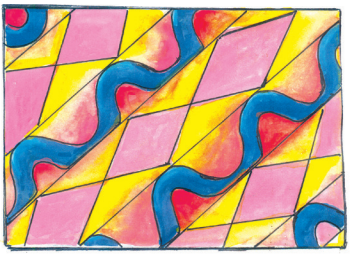
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Observe the different patterns on the cloth.

1)



2)



Observe the different patterns found in your surroundings.

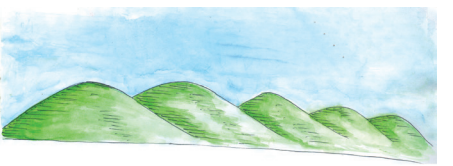
1)





2)

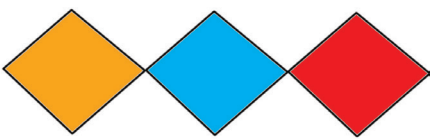




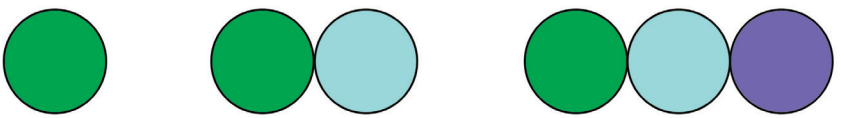
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Observe the patterns based on colours.

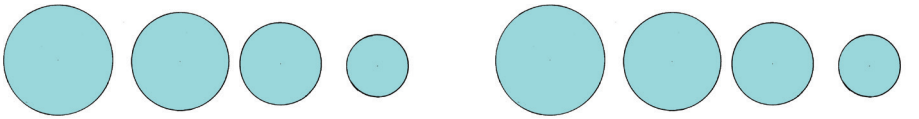
1)

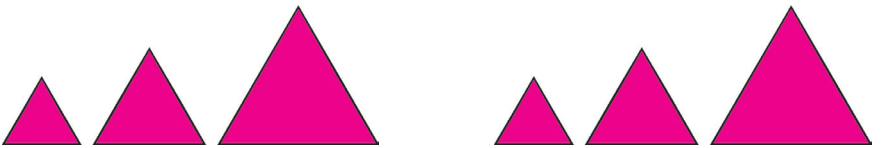


2)



Observe the patterns based on size.

1) 

2) 

With the help of your teacher, prepare flash cards and play with them.

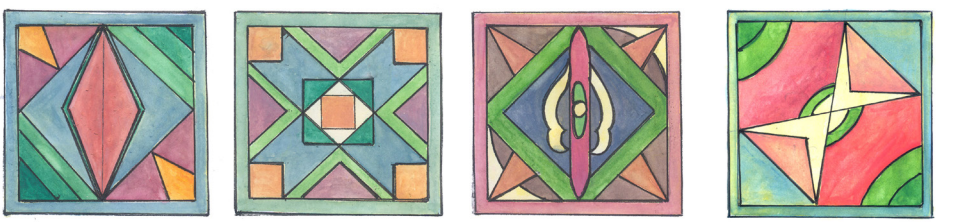
 Prepare four sets of flash cards of diffrent size in each shape. Fill the triangle card with red colour, circle with green colour, and the square with blue colour. Play the game of constructing different shape and figures.

Example :  .....

Example :  .....

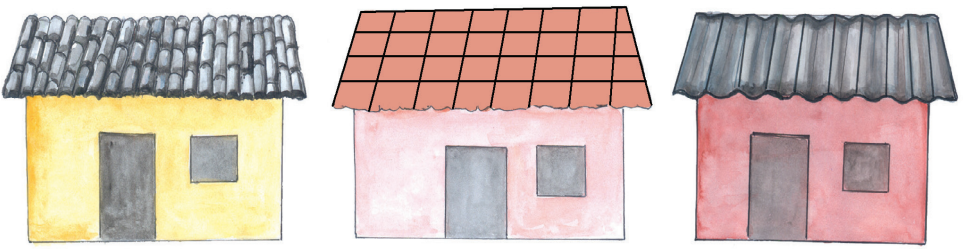
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Exercise 12.4



1 How many patterns of tiles are there?

2)



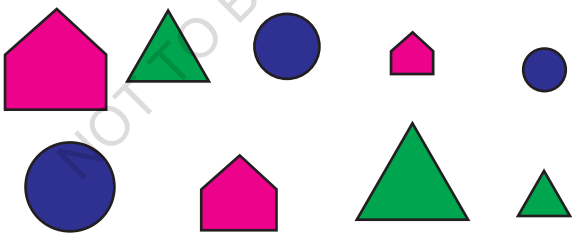
How many types of roof tiles are there?

3)  Draw /make two different patterns using these shapes.

4) Create a pattern by colouring the pictures given below.



5) Use the following shapes and draw patterns indicated below.



i) Draw patterns of different shapes.

ii) Draw patterns of different colours.

iii) Draw patterns of different shapes and colour.

6) Make patterns using picture of the things present in your surroundings.

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Number patterns in a multiplication table.

"Multiplication table from 1 to 10"

→ Row →

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

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* Multiplication table from 1to10 is written in vertical lines.
* 1 to 10 multiplication table can be obtained in horizontal line also.

Exercise 12.5

Different patterns obtained from the multiplication table :

1) 1, 2, 3, 4, 5 .....

This number pattern is obtained by adding 1 to the previous number.

2) 2, 4, 6, 8, 10, ...

This number pattern is obtained by adding 2 to the previous number

3) 3, 6, 9, 12, 15, 18, ...

It is obtained by adding 3 to the previous number in the table 3.

4) 5, 10, 15, 20, 25, ..., ..., ...

Patterns of digits in unit place.

5, 0, 5, 0, 5, ..., ..., ...

5) 8, 16, 24, 32, 40,48,56,64,72,80 ....., ..., ...

Adding the digits in a number till we get a single digit.

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

8, 7,6,5,4,12,11,10,9,8, _____

8,7,6,5,4, 1+2 1+1 1+0 9 8 _____

8,7, 6, 5, 4, 3, 2, 1, 9 8 _____

Types of number formed 8, 7, 6, 5, 4, 3, 2, 1, 9, 8

_ _ _ _ _

6) 9, 18, 27, 36, 45, 54, 63 .....

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

9,9,9,9,9, 9, 9, 9, ...

Pattern form 9,9,9,9 _ _ _ _ _

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Exercise 12.6

I. Complete the number pattern

1) 3, 6, 9, 12, 15, ...

2) 40, 36, 32, 28, ...

3) 5, 10, 15, 20, 25, ...

4) 60, 54, 48, 42, ...

5) 100, 90, 80, 70, 60, ...

II. Write the number pattern obtained by multi- plication table 10.

Find out the formation of number pattern obtained by Multiplication table 9.

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