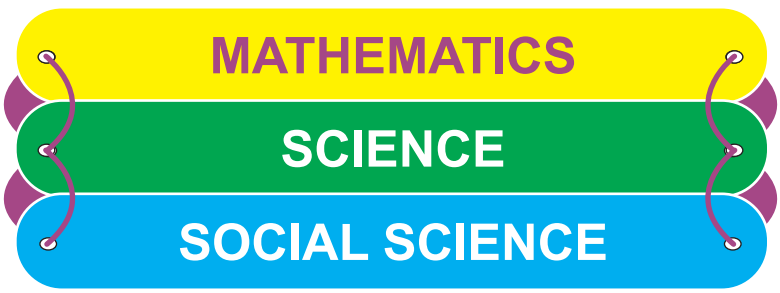
Government of Tamilnadu

STANDARD FOUR

TERM III

VOLUME 2



NOT FOR SALE

Untouchability is Inhuman and a Crime

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MATHEMATICS

STANDARD FOUR

Term III

What these Icons stand for!

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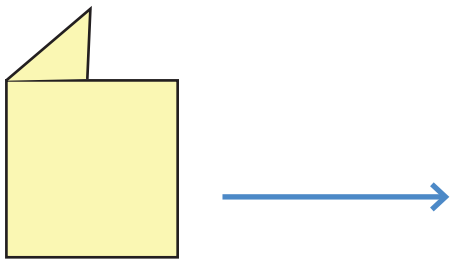
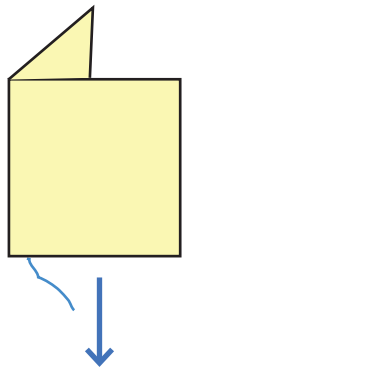
1. SYMMETRY AND REFLECTION

Reflections through Ink plots

✶ Take a rectangular sheet of paper and fold it into half.

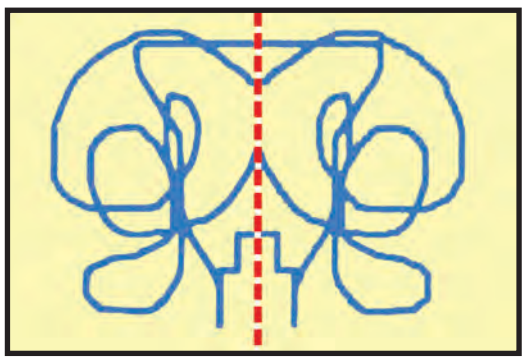


✶ Soak a thread with ink and place it inside the folded paper and pull the thread out.



✶ Open the paper. What do you see? Some designs are formed on either side of the folding. Are they same?

Yes, but opposite in face, that is they appear identical but in reverse. This design is in reflection.

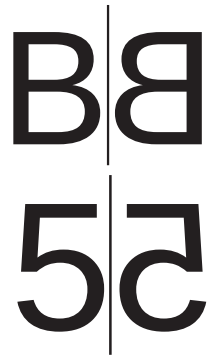


In the same way do some more reflection designs and stick them in your notebook.

Stick the Designs

Fathima, I will do another pattern. Will you help me?

Yes, Kamala, let us have fun.



Take a white sheet and write the alphabet 'B' in bold letter using crayons. Fold and scratch it gently till the impression is formed on the other side. Open it and see.

Ok, Kamala, I will try with number 5.

Very interesting Kamala, shall we create many pictures like this and stick in our notebook and show to our teacher?

Reflections through Mirror

Saranya : Teacher, is there any special name for these pictures?

Teacher : Yes, these are called Mirror images. These pictures are in mirror reflections.

Fathima : Teacher, I see a line between the two sides which divides the pictures equally on either side.

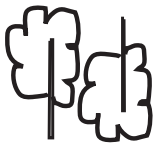
Teacher : Oh, that line is called "Mirror line symmetry".

Tick the mirror images.

1) R Я ☑

2)  ☐

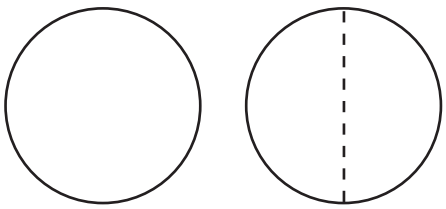
3) C C ☐

4)  ☐

5) 4 ⅃ ☐

6)  ☐

Line of symmetry

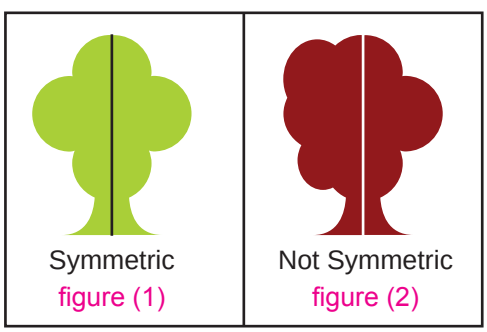


Cut a circular paper, fold it equally. A line divides it into two equal halves. This line is called 'line of symmetry', which means it is exactly the same on both sides of the line.

Practice

Cut a rectangular paper, fold it equally. Draw a line on the folding and stick the paper in your notebook.

Check for symmetry.



Symmetric figure (1)

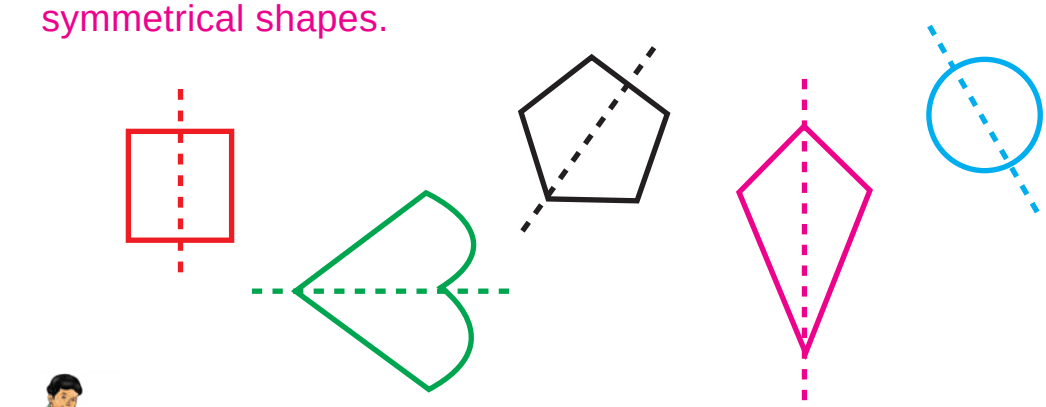
Not Symmetric figure (2)

- Trace two given figures in a small paper separately, fold it and check for the line of symmetry.
- In figure(1) you get a line of symmetry so that the two parts coincide exactly, figure(1) is symmetrical. In figure(2), two parts do not coincide, so figure (2) is not symmetrical.

Symmetry in geometrical shapes

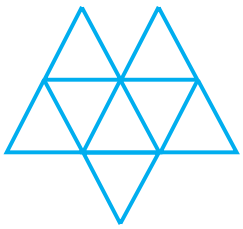
Observe the following shapes:

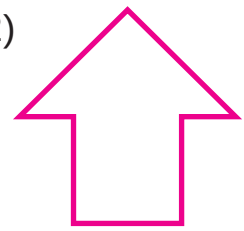
A line of symmetry divides a figure into mirror-images. The dotted lines below are the line of symmetry. It divides the figure into two equal parts. Both the sides are symmetrical. These are called symmetrical shapes.

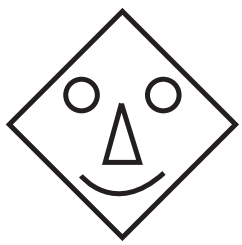


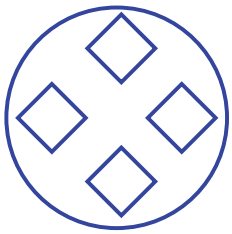
Practice

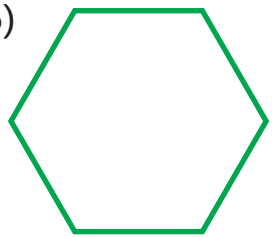
Draw the line of symmetry for the following figures.

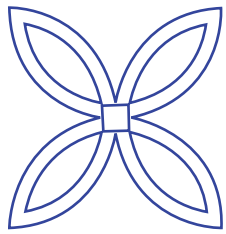
1) 

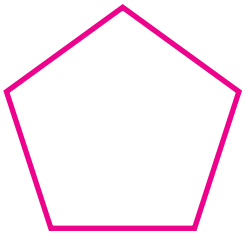
2) 

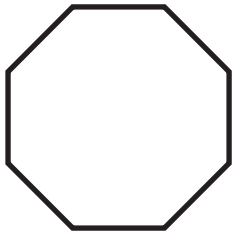
3) 

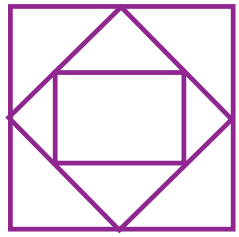
4) 

5) 

6) 

7) 

8) 

9) 

Draw the line of symmetry and circle the letters which do not have the line of symmetry.

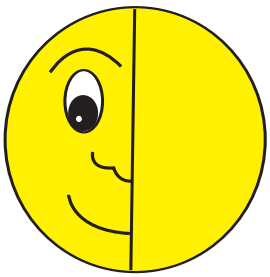
1) A B F G H

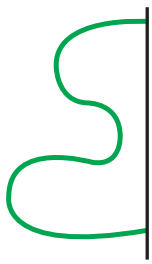
2) K M N O P

3) S U V Z L

4) J Y R C D

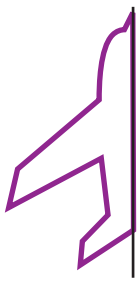
Draw the other half to make the given pictures symmetrical.

1) 

2) 

3) 

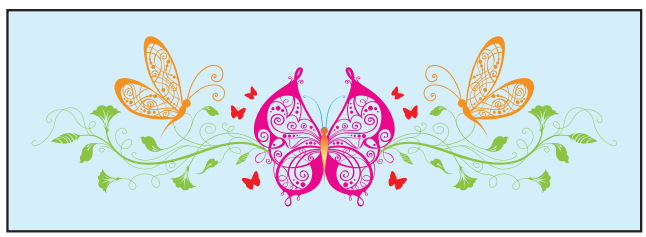
4) 

5) 

6) 

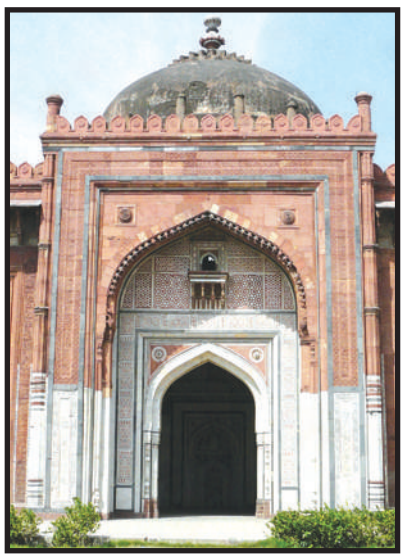
Project

- Nowadays, children like to decorate their hands with tattoos.
- Many of the designs of tattoos are symmetrical.
- Some designs are given below.
- Stick some designs of your choice in your notebook.



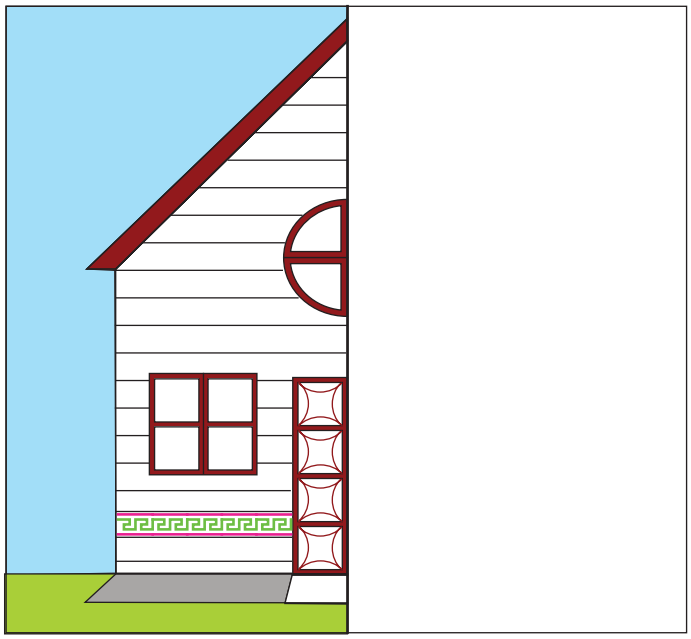
Visualize the symmetrical figures

Observe the pictures. They are very beautiful. Symmetry is maintained on the left and right side of the buildings.

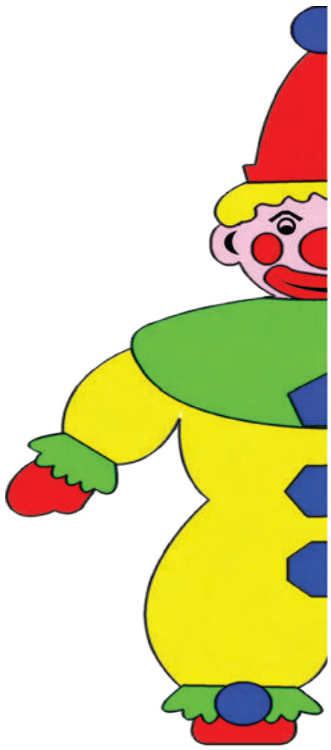


Practice

1) Complete the other side of the house and colour it.



2) Complete the other side of the clown and colour it.



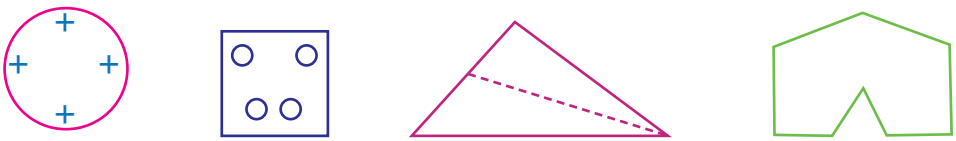
Revision

1) A line that divides the picture equally on either side is called

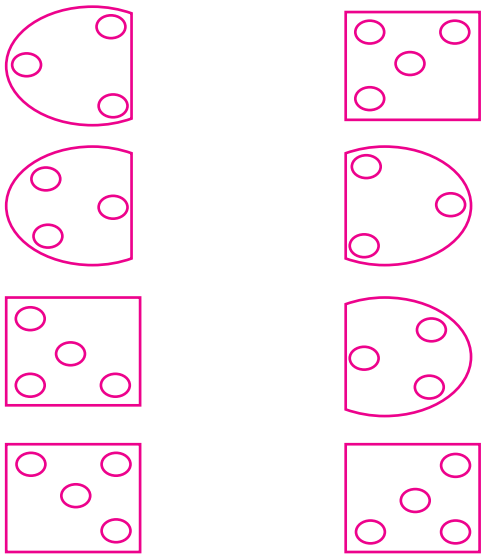
_____

2) Draw the line of symmetry. Tick the symmetrical alphabets and pictures given below.

K M N

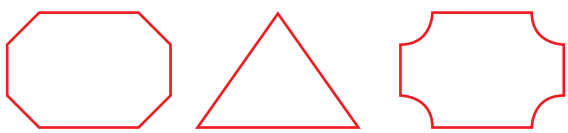


3) Match the mirror images.



4) Draw the lines of symmetry.

X M W

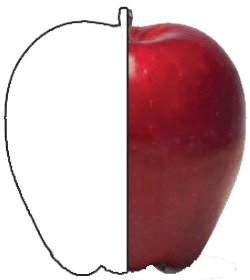


2. SHARING WHOLE

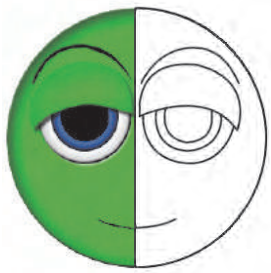
Fraction of a whole

Colour the remaining half in the following figures.

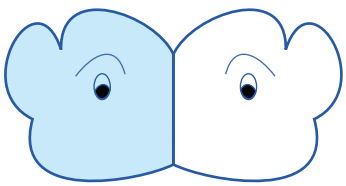
(1)



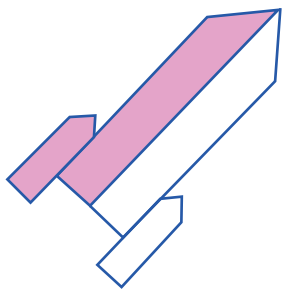
(2)



(3)

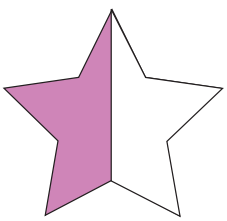


(4)



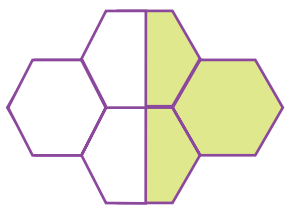
(5)

(6)



(7)

(8)

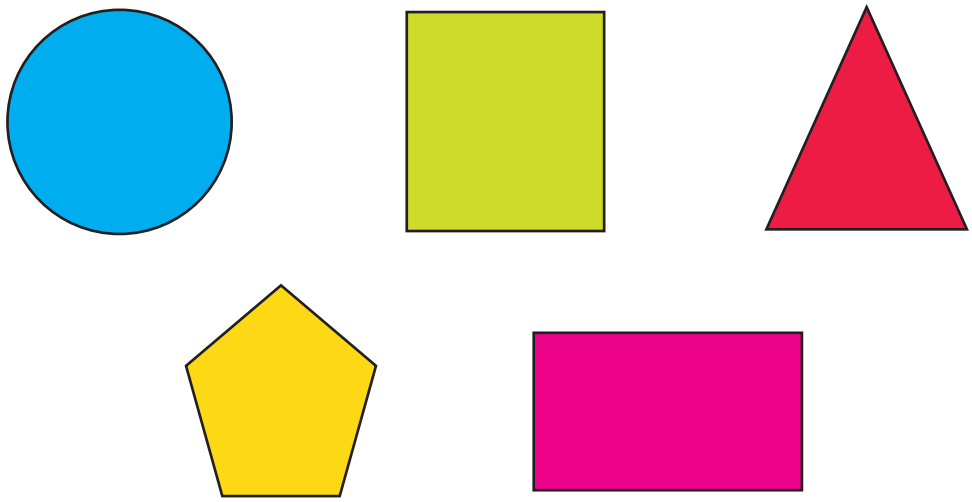


(9)

Each figure is divided into two equal parts.
Each part is called half. We write it as $\frac{1}{2}$

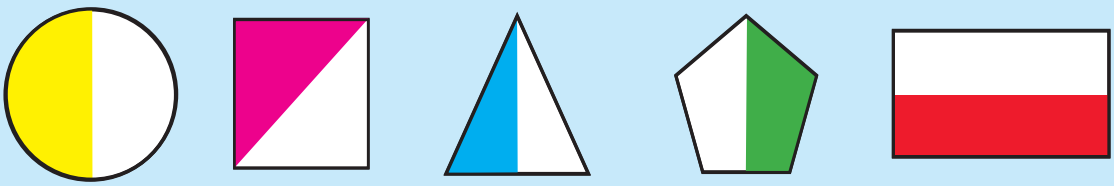
Representation of fractions for the coloured part

1 means the **whole.** Here the whole part is coloured.

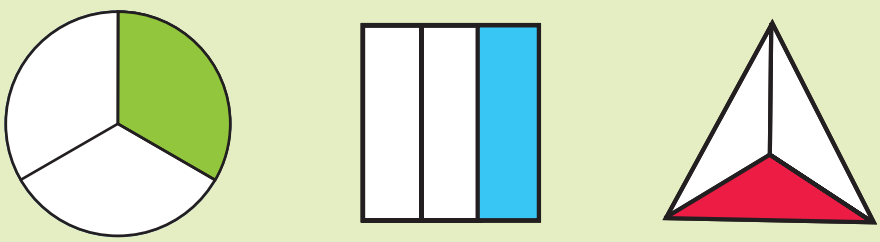


Dividing the whole

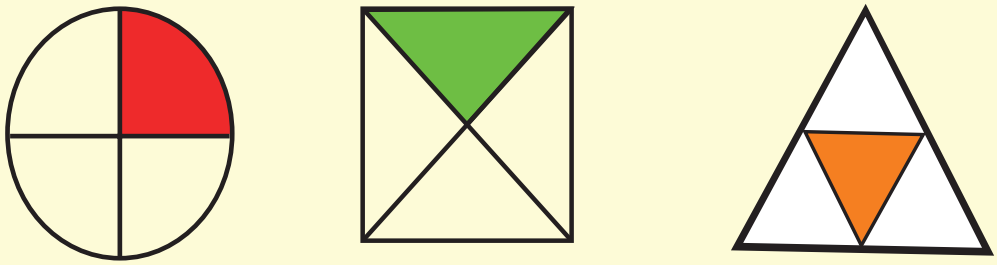
Whole is divided into 2 equal parts. One part is coloured. The coloured part represents $\frac{1}{2}$



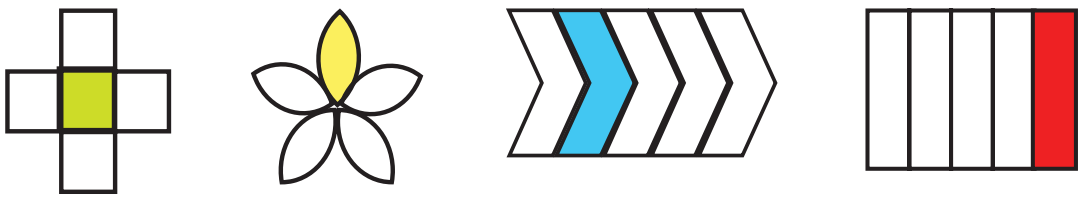
Whole is divided into 3 equal parts. One part is coloured. The coloured part represents $\frac{1}{3}$.



Whole is divided into 4 equal parts. One part is coloured. The coloured part represents $\frac{1}{4}$.



Whole is divided into 5 equal parts. One part is coloured. The coloured part represents $\frac{1}{5}$.



$\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{5}$ **are called fractional numbers.**

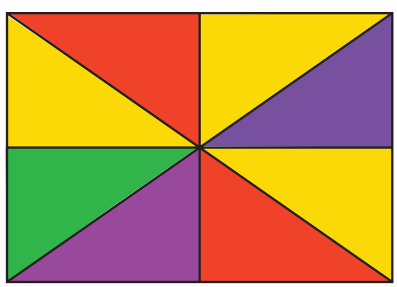
Fractions representing the coloured parts

The fraction part coloured in red = $\frac{2}{8}$

The fraction part coloured in green = $\frac{1}{8}$

The fraction part coloured in yellow = $\frac{3}{8}$

The fraction part coloured in violet = $\frac{2}{8}$



MATHEMATICS

Representation of fractions for the uncoloured part

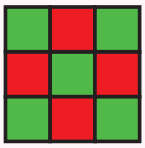
Picture	Fractional number	In words
	$\frac{1}{2}$	Half
	$\frac{1}{3}$	One-third
	$\frac{1}{4}$	One-fourth
	$\frac{1}{5}$	One-fifth
	$\frac{1}{6}$	One-sixth
	$\frac{1}{7}$	One-seventh
	$\frac{1}{8}$	One-eighth
	$\frac{1}{9}$	One-ninth

The circle is divided into two, three, four, five, six, seven, eight and nine equal parts. One part is uncoloured. The fraction of the uncoloured parts are $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{1}{6}$, $\frac{1}{7}$, $\frac{1}{8}$ and $\frac{1}{9}$ respectively.

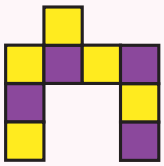
Practice

1) 

- The fraction for the coloured parts in red = ☐
- The fraction for the coloured parts in blue = ☐

2) 

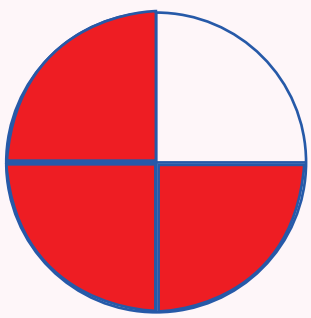
- The fraction for the coloured parts in red = ☐
- The fraction for the coloured parts in green = ☐

3) 

- The fraction for the coloured parts in yellow = ☐
- The fraction for the coloured parts in violet = ☐

Numerator and denominator

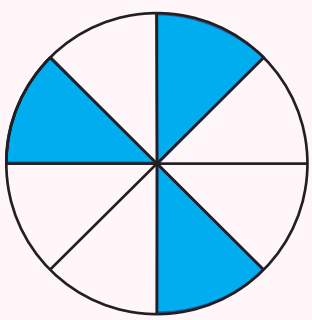
$$\frac{\text{The coloured parts of circle}}{\text{Total equal parts of circle}} = \frac{\text{Numerator}}{\text{Denominator}}$$



$\frac{3}{4}$

Numerator = 3

Denominator = 4



$\frac{3}{8}$

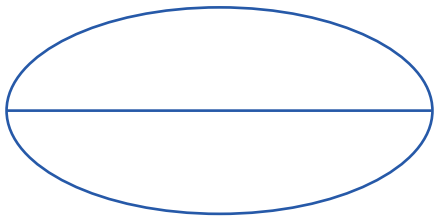
Numerator = 3

Denominator = 8

MATHEMATICS

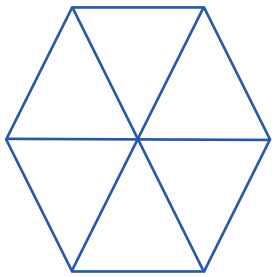
Practice

Colour the following shapes as indicated and write the numerator and denominator

1) 

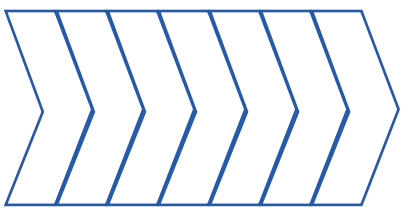
$\frac{1}{2}$

Numerator =
Denominator =

2) 

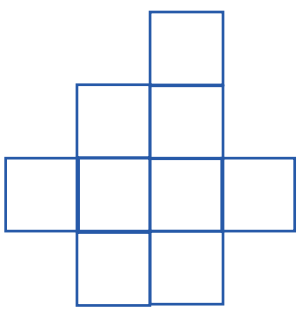
$\frac{5}{6}$

Numerator =
Denominator =

3) 

$\frac{4}{7}$

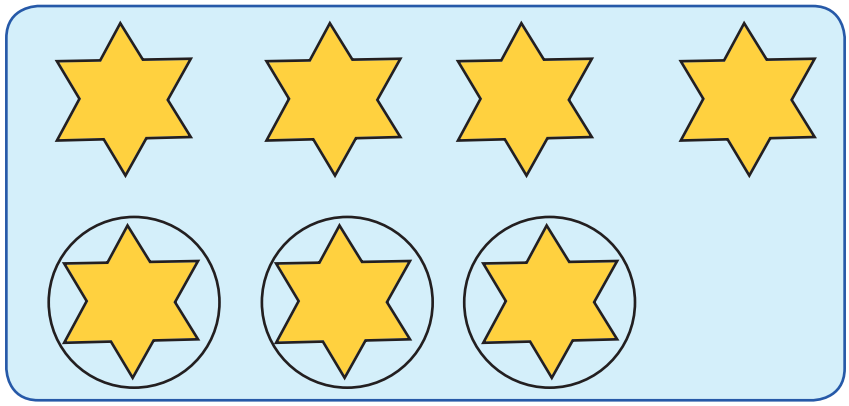
Numerator =
Denominator =

4) 

$\frac{2}{9}$

Numerator =
Denominator =

Fraction as a part of collection



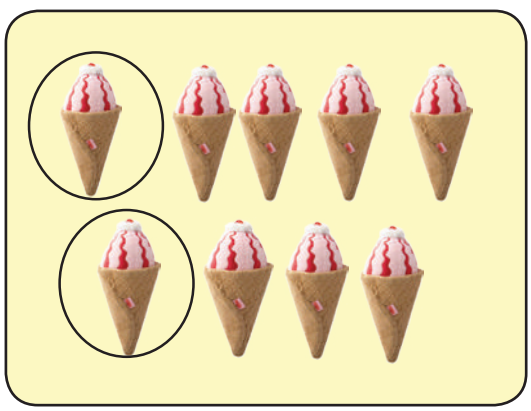
There are seven stars.

Three stars are circled.

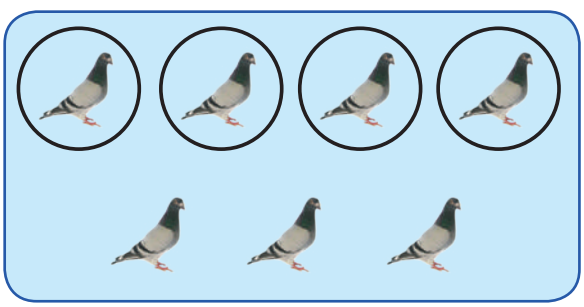
$\frac{3}{7}$ represents the fractional number of stars circled.

Practice

Write the fractions for circled figures.

1) 

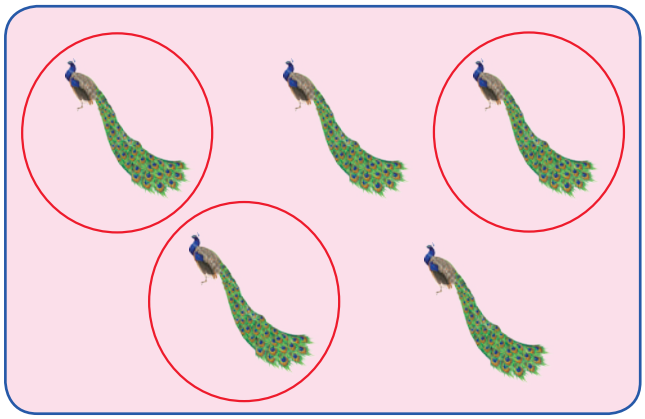
Fractional number of circled cone ice-creams is ☐

2) 

☐ represents the fractional number of circled pigeons.

MATHEMATICS

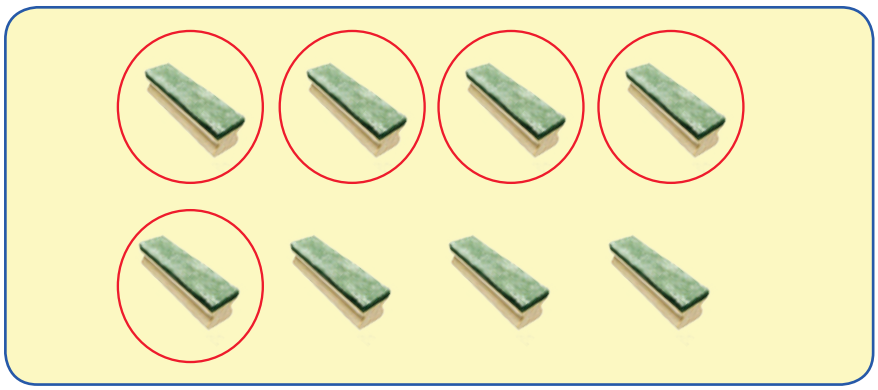
3)



☐ represents the fractional number of circled peacocks.

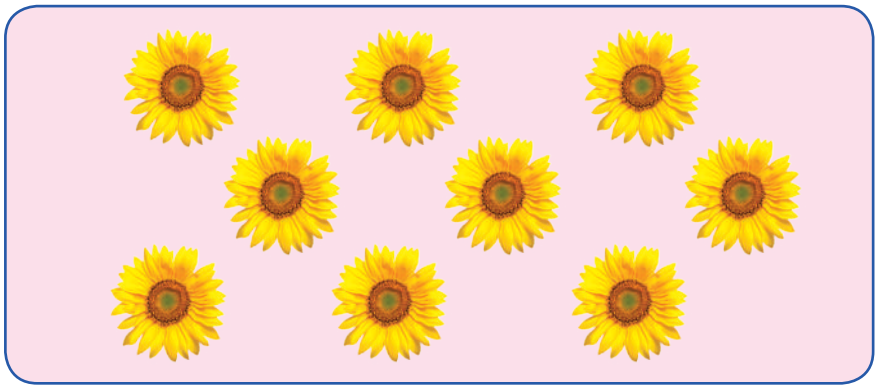
Circle the figures to denote the given fractions.

1)



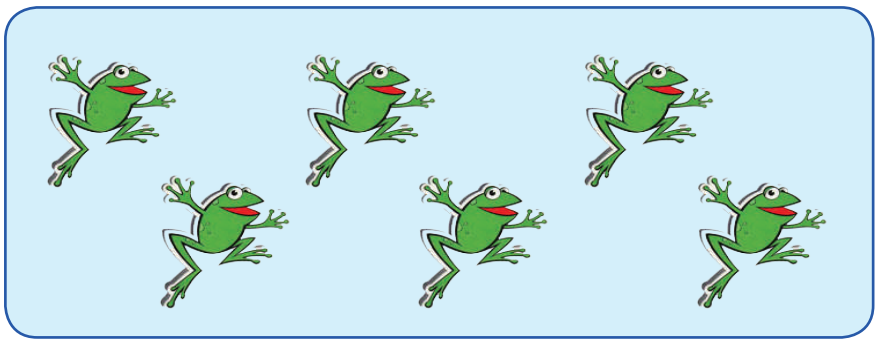
$\frac{5}{8}$

2)



$\frac{4}{9}$

3)



$\frac{1}{6}$

Equivalent fractions

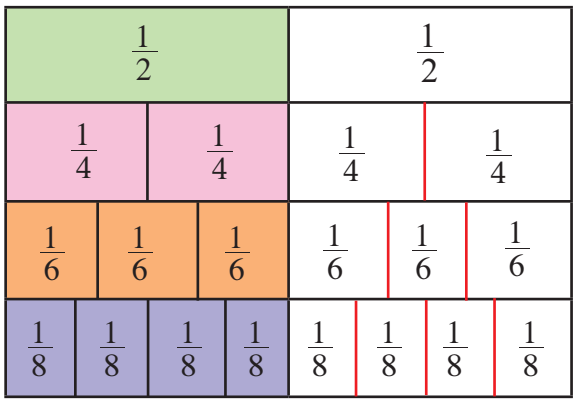
Out of eight equal diamonds, 4 are coloured.

4 is half of 8

Out of six students, 3 are boys.

3 is half of 6

Observe the picture and discuss.



The same portion of each rectangle is coloured.

Green rectangle refers to $\frac{1}{2}$.

Pink rectangle refers to $\frac{2}{4}$.

Orange rectangle refers to $\frac{3}{6}$.

Violet rectangle refers to $\frac{4}{8}$.

All the coloured rectangles are same in size. $\frac{1}{2} = \frac{2}{4} = \frac{3}{6} = \frac{4}{8}$

$\frac{1}{2}, \frac{2}{4}, \frac{3}{6}, \frac{4}{8} \ldots$ **are equivalent fractions.**

Let us frame equivalent fractions.

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

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

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

Multiply the numerator and denominator of the fraction by the same number to form equivalent fractions.

Practice

Write down the equivalent fractions.

(1) $\frac{2}{3} = \frac{4}{6} = \frac{6}{9}$

(2) $\frac{1}{4} = \square = \square$

(3) $\frac{2}{5} = \square = \square$

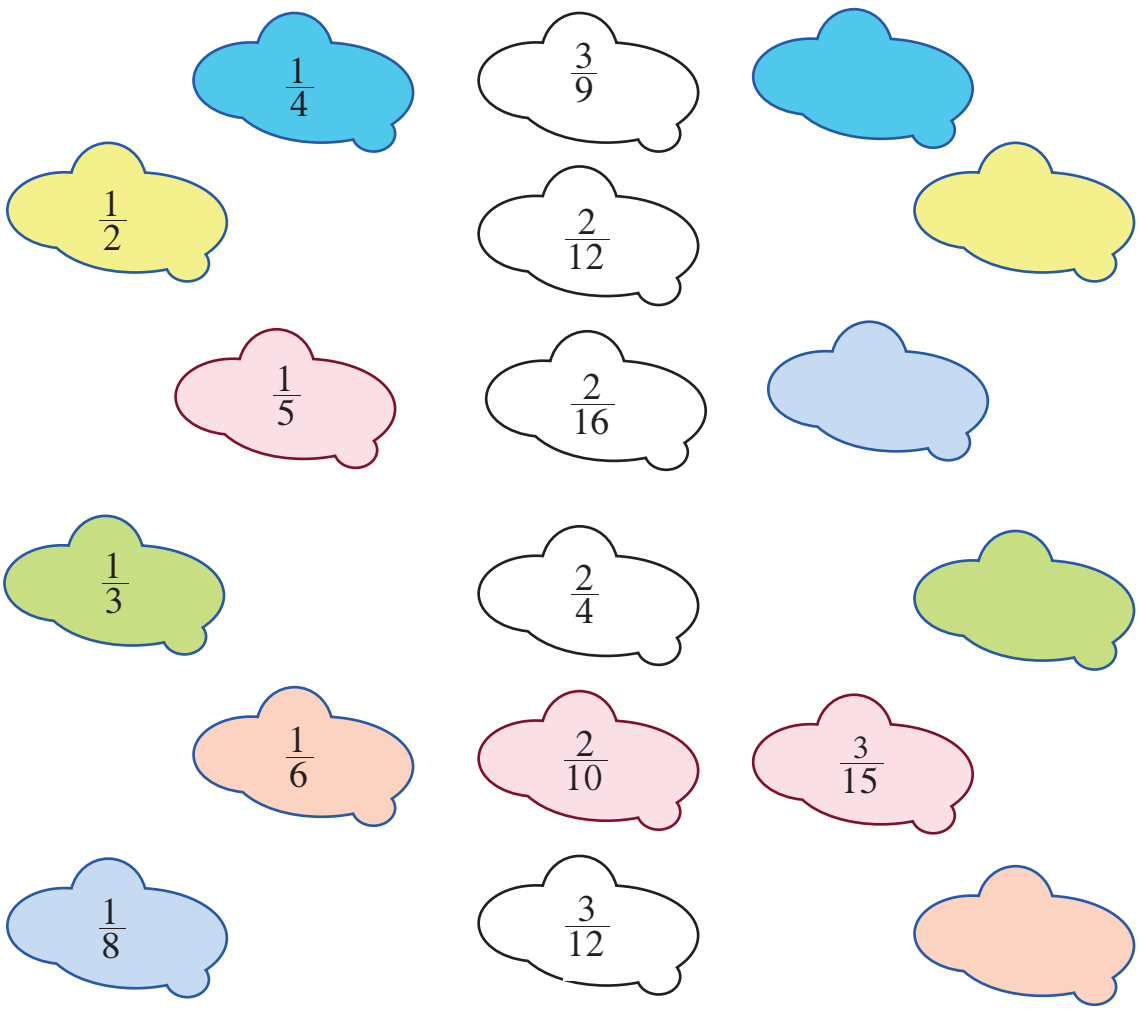
(4) $\frac{1}{3} = \square = \square$

(5) $\frac{1}{7} = \square = \square$

(6) $\frac{3}{8} = \square = \square$

Lab activity

Look at the fractions in the coloured clouds. For each fraction one equivalent fraction is given in the middle. Colour the equivalent fraction with corresponding colour in the cloud and write one more equivalent fraction in the corresponding coloured cloud.



Comparing fractions

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

A bar chocolate has 6 pieces. One piece is taken out from six pieces. Its fraction is $\frac{1}{6}$ (one-sixth)

3 pieces are taken out from 6 pieces. Its fraction is $\frac{3}{6}$ (three-sixths)

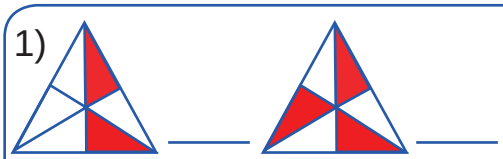
To compare the two fractions $\frac{1}{6}, \frac{3}{6}$

$\frac{3}{6}$ is greater fraction

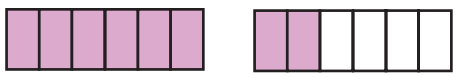
$\frac{1}{6}$ is smaller fraction

Practice

Write the fractions for the coloured parts and circle the smaller fractions

1) 

2) 

3) 

4) 

Circle the greater fraction

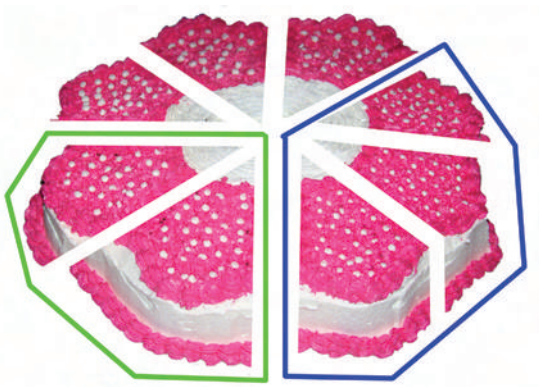
5) $\frac{2}{7}, \frac{3}{7}$ 6) $\frac{5}{8}, \frac{4}{8}$ 7) $\frac{4}{9}, \frac{7}{9}$

Circle the smaller fraction

8) $\frac{2}{6}, \frac{5}{6}$ 9) $\frac{6}{9}, \frac{3}{9}$ 10) $\frac{2}{5}, \frac{4}{5}$

Addition in fractions

Birthday party



Akash celebrated his birthday by giving cakes to his friends. Out of 8 equal pieces of cake, he gave 3 pieces to Anandhi and 2 pieces to Ram.

Anandhi's parts = Three eighth = $\frac{3}{8}$

Ram's parts = Two eighth = $\frac{2}{8}$

Total parts given to his friends = $\frac{3}{8} + \frac{2}{8}$

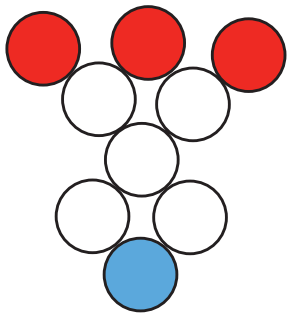
= $\frac{3+2}{8}$

Total parts given to his friends = $\frac{5}{8}$

$$\frac{3}{8} + \frac{2}{8} = \frac{5}{8}$$

For adding two fractions with the same denominators, add the numerators and keep the same denominator.

Add the fractions



$$\frac{3}{9}+\frac{1}{9}=\frac{3+1}{9}=\frac{4}{9}$$

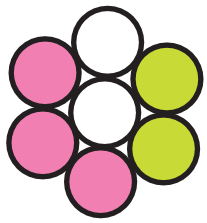
Practice

Write the fraction for the coloured and add.

1)

$\frac{2}{4}$ + $\frac{1}{4}$ = $\frac{3}{4}$

2)

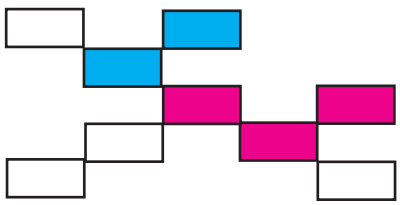


____ + ____ = ____

3)

____ + ____ = ____

4)



____ + ____ = ____

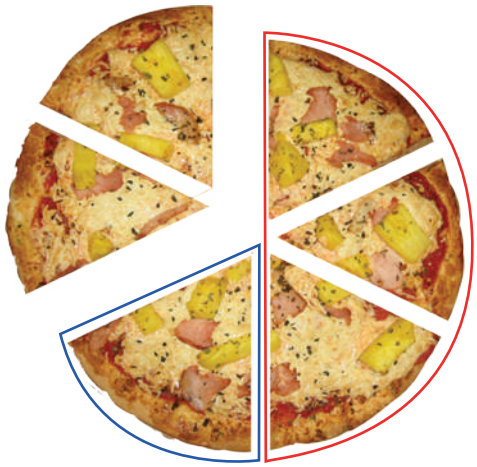
Add the fractions.

1) $\frac{3}{5}+\frac{1}{5}$ 2) $\frac{2}{9}+\frac{5}{9}$ 3) $\frac{2}{5}+\frac{2}{5}$ 4) $\frac{1}{3}+\frac{1}{3}$

5) $\frac{4}{9}+\frac{3}{9}$ 6) $\frac{3}{6}+\frac{2}{6}$ 7) $\frac{3}{7}+\frac{1}{7}$ 8) $\frac{2}{8}+\frac{4}{8}$

Subtraction in fractions

Pizza Corner



Sri Ram took $\frac{4}{6}$ parts of pizza. He gave $\frac{3}{6}$ parts to his sister Meenu. How many parts of pizza were left with him?

Parts of pizza taken by Sri Ram $= \frac{4}{6}$

Parts of pizza given to Meenu $= \frac{3}{6}$

Parts of pizza left with him $= \frac{4}{6} - \frac{3}{6}$

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

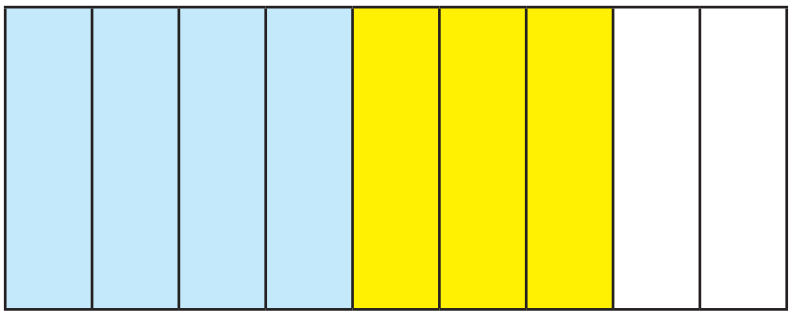
$= \frac{1}{6}$

Fractional number of pizza left with him $= \frac{1}{6}$

$$\frac{4}{6} - \frac{3}{6} = \frac{1}{6}$$

While subtracting fractions with the same denominators, subtract the numerators and keep the same denominator.

Subtract the fractions : $\frac{7}{9} - \frac{4}{9}$



Seven parts are coloured.

The fraction for the coloured part = $\frac{7}{9}$

The fraction for the coloured part in blue = $\frac{4}{9}$

The fraction for the coloured part in yellow = $\frac{7}{9} - \frac{4}{9}$

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

The fraction for the coloured part in yellow = $\frac{3}{9}$

$\frac{7}{9} - \frac{4}{9} = \frac{3}{9}$

Practice

Subtract the fractions

1) $\frac{5}{6} - \frac{2}{6}$ 2) $\frac{5}{9} - \frac{3}{9}$ 3) $\frac{3}{4} - \frac{1}{4}$ 4) $\frac{5}{8} - \frac{3}{8}$

5) $\frac{6}{9} - \frac{1}{9}$ 6) $\frac{7}{8} - \frac{3}{8}$ 7) $\frac{3}{5} - \frac{1}{5}$ 8) $\frac{3}{7} - \frac{2}{7}$

Revision

Answer the following questions.

1) Write down the fractions for the coloured part.

i) 

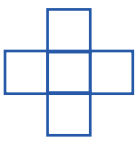
ii) 

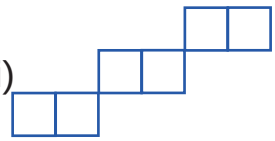
iii) 

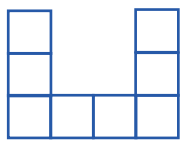
2) Write two equivalent fractions for the following.

i) $\frac{2}{4}$ ii) $\frac{3}{5}$ iii) $\frac{1}{7}$ iv) $\frac{2}{3}$

3) Colour the figures for the given fractions.

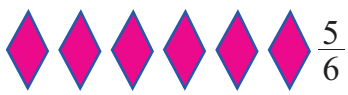
i)  $\frac{2}{5}$

ii)  $\frac{2}{6}$

iii)  $\frac{3}{8}$

4) Circle the figures to the given fractions.

i)  $\frac{5}{7}$

ii)  $\frac{5}{6}$

5) Add the fractions.

i) $\frac{2}{4}+\frac{1}{4}$ ii) $\frac{1}{5}+\frac{3}{5}$ iii) $\frac{3}{9}+\frac{2}{9}$ iv) $\frac{1}{3}+\frac{1}{3}$

v) $\frac{4}{7}+\frac{1}{7}$ vi) $\frac{2}{6}+\frac{3}{6}$ vii) $\frac{3}{8}+\frac{1}{8}$ viii) $\frac{6}{9}+\frac{2}{9}$

6) Subtract the fractions.

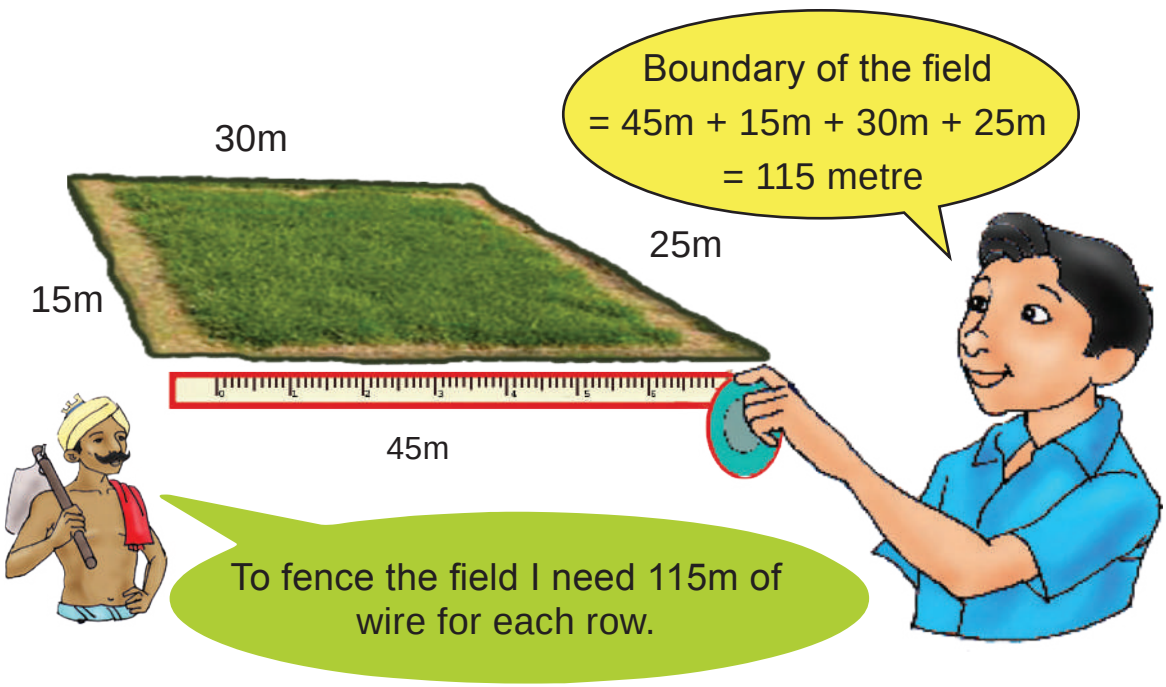
i) $\frac{3}{4}-\frac{1}{4}$ ii) $\frac{3}{6}-\frac{2}{6}$ iii) $\frac{4}{9}-\frac{2}{9}$ iv) $\frac{4}{5}-\frac{3}{5}$

v) $\frac{5}{7}-\frac{3}{7}$ vi) $\frac{2}{3}-\frac{1}{3}$ vii) $\frac{7}{9}-\frac{3}{9}$ viii) $\frac{4}{7}-\frac{1}{7}$

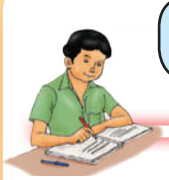
3. PERIMETER AND AREA

Suresh is a farmer. He wants to fence his field.

He is measuring the sides of the field with the help of his son.



Sum of all the sides of the field is called its perimeter. The length of the boundary of a closed figure is called its perimeter.

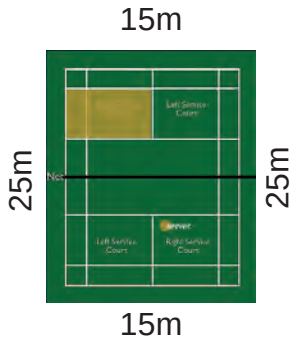


Perimeter = Sum of all the sides of the shape.

Practice

Find the perimeter for the following.

1)

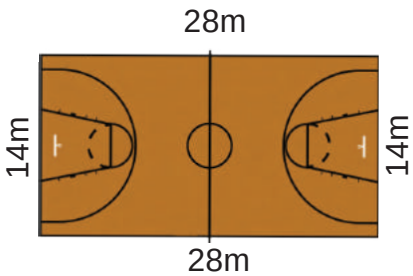


Perimeter of badminton court

= 15m + 25m + 15m + 25m

= _____ m

2)

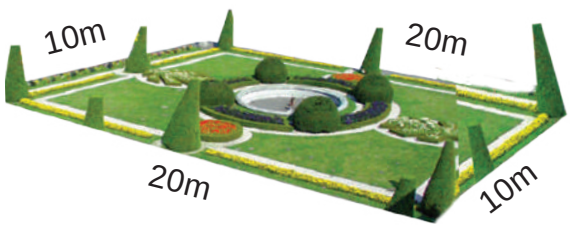


Perimeter of basketball court

= _____

= _____ m

3)



Jothi goes for a walk around of the park every morning. What is the total distance she covers by walk?

Distance covered by walk = perimeter of the park

= _____

= _____ m

4)

Anu's mother Devi planted marigolds in her garden. Now she wants to fence her garden. Find the length of fence.

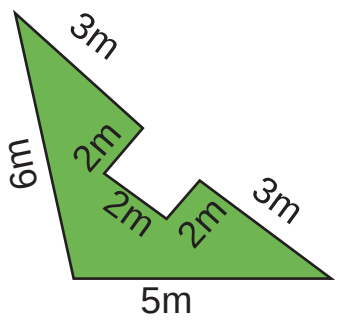
Length of the fence = perimeter

= _____

= _____ m

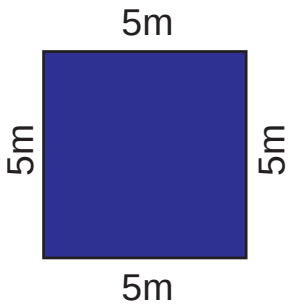
Perimeter

5)



= 5m + 6m + 3m + 2m + 2m +2m + 3m
= 23m

6)

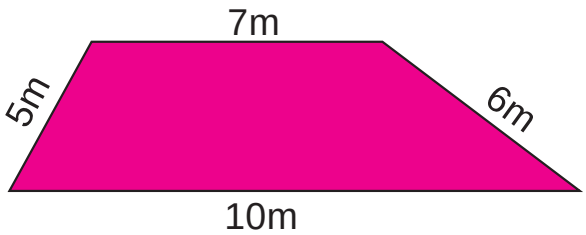


Perimeter

= _____

= _____

7)

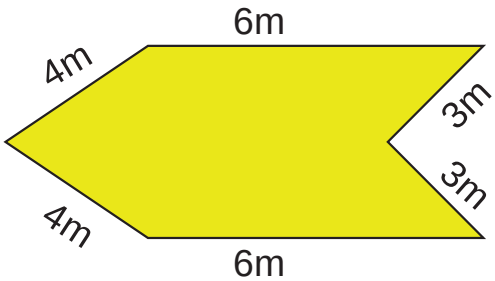


Perimeter

= _____

= _____

8)

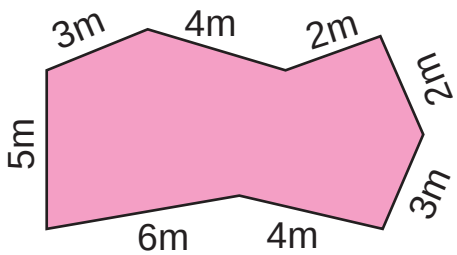


Perimeter

= _____

= _____

9)



Perimeter

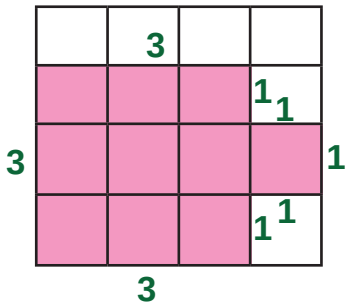
= _____

= _____

MATHEMATICS

Perimeter on a square paper

We can easily find the perimeter of a shape drawn on square paper.

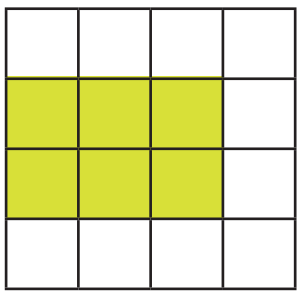


The side of each square is 1cm.

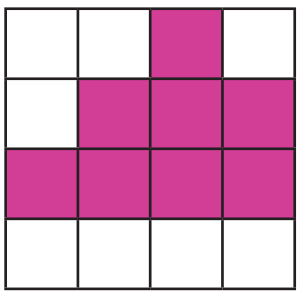
Perimeter of the shape on the square paper = 14cm.

Practice

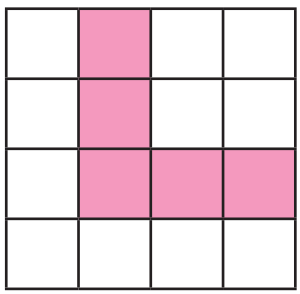
Find out perimeter of the shapes given below.

1) 

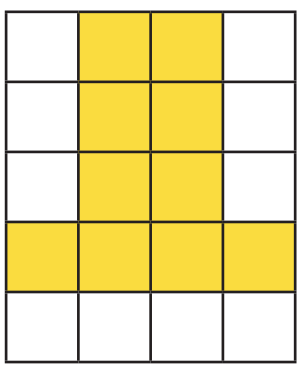
Perimeter = _____

2) 

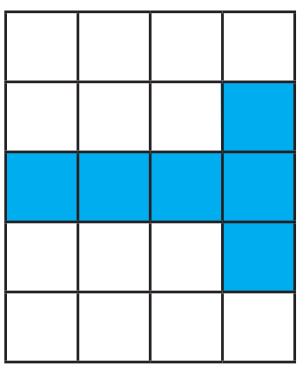
Perimeter = _____

3) 

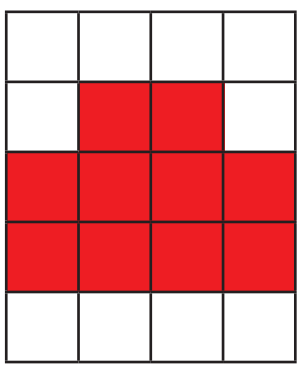
Perimeter = _____

4) 

Perimeter = _____

5) 

Perimeter = _____

6) 

Perimeter = _____

Area

Look at the picture drawn in the post card.

The picture occupies some space on the card.

This space is area of the picture.

The space occupied by a shape is called its area

Lab activity

- Collect stamps.
- Stick them as shown.

Observe the area of each stamp.

- Place your pencil box on your notebook.
- Trace and colour.

The coloured space is the area of base of the box.

- Collect a few greeting cards of different sizes. Find out the areas by tracing

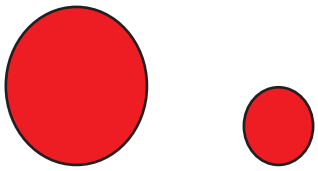
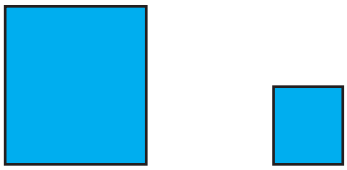
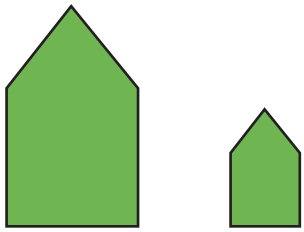
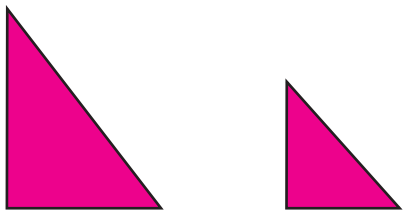
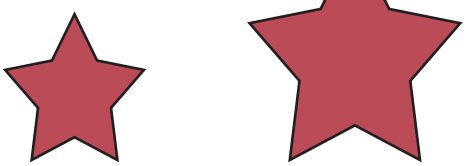
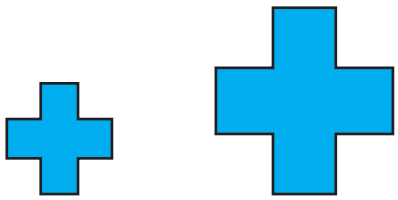
Comparing area

Two pictures are given. The areas of the pictures are not equal. Area of the picture (1) is greater than the area of the picture (2)

picture (1) picture (2)

Practice

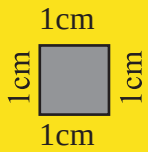
Tick the figure which has the greater area.

1)  	2)  
3) 	4) 
5) 	6) 
7) 	8) 
9) 	10) 

Area on the square paper

The unit for measuring area is square unit.

Square unit can be written as sq. unit.



Area of this unit square is 1 sq.cm.

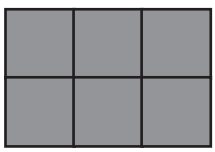
There are four unit squares in this square.

1 unit square = 1 sq.cm.

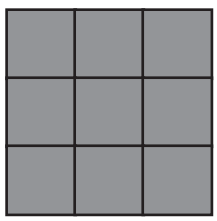
Area of this square = 4 sq.cm.

Practice

Find the area of the following shapes.  = 1 sq.cm.

1) 

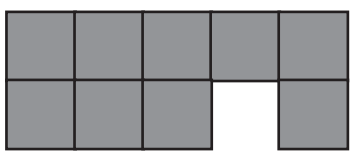
Area = _6_ sq.cm.

2) 

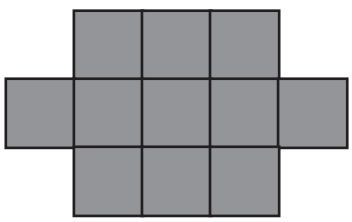
Area = _____

3) 

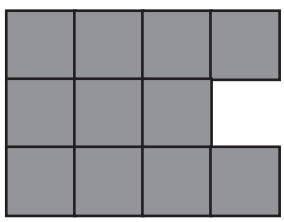
Area = _____

4) 

Area = _____

5) 

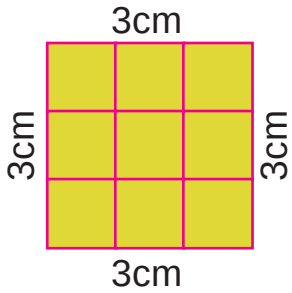
Area = _____

6) 

Area = _____

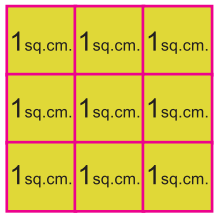
MATHEMATICS

Comparing perimeter and area



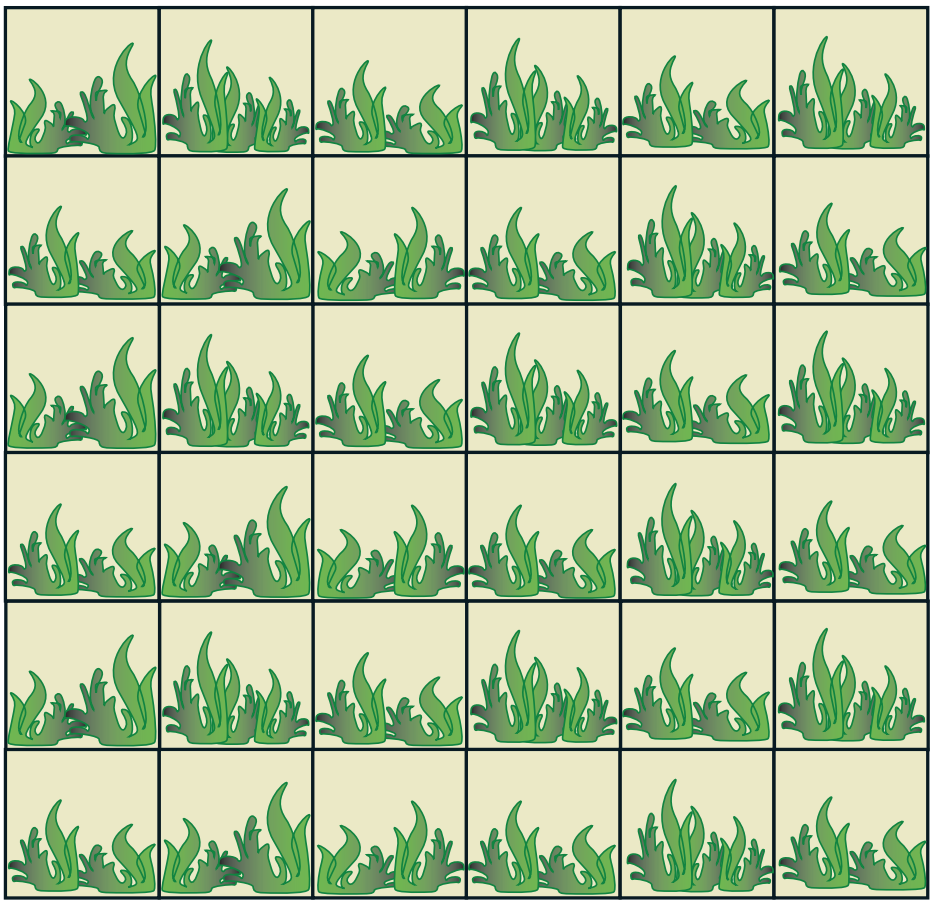
Perimeter of this square = 12 cm

Area of the square = 9 sq.cm.



Puzzle

- Look at the field given below.
- Divide the field into 4 equal areas
- The four divided areas should be in different shapes.



Revision

Fill in the blanks.

1) Area of 1 unit square is _____

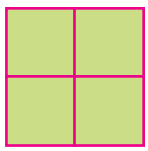
2) Sum of all the sides of shape is _____

3) Square unit can be written as _____

4) We can easily find the perimeter and area of a shape drawn on a _____ paper.

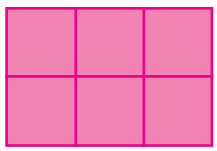
5) The space occupied by a shape is called _____

Find the area and perimeter of the following figures. The area of each unit square is 1 sq cm.

1) 

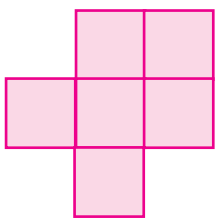
Perimeter = _____

Area = _____

2) 

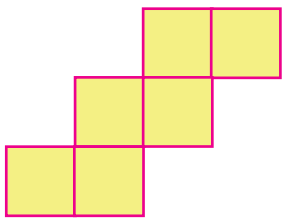
Perimeter = _____

Area = _____

3) 

Perimeter = _____

Area = _____

4) 

Perimeter = _____

Area = _____

MATHEMATICS

4. HANDLING MONEY

Two friends are talking about the change of rupees.

Do you have change for 1000 rupees ?

Shall I give two 500 rupee notes?

No, I want in 100 rupee notes?

I am not having ten 100 rupee notes. Only I have five 100 rupee notes.

Okay, you give one 500 rupee note and five 100 rupee notes.

Rupees can be expressed as ₹ and paise can be expressed as p.

₹5.50 can be written in words as Rupees five and fifty paise or Five rupees and fifty paise.

5 Rupees ← → 50 paise

₹ 5.50

Play with coins

Can you make ₹1 using 50 p coins ?

Look here !

★ ₹ 1 using 50 p coins

★ ₹ 2 using ₹ 1 coins

Now try !

★ Make ₹ 5 using 1 rupee coins.

★ Make ₹ 10 using 2 rupee coins.

★ Make ₹ 50 using 5 rupee coins.

Know it.

50 p + 50 p = 100 p

100 p = ₹ 1

MATHEMATICS

Denominations

Write down the denominations for the amount given.

₹ 595 = ₹ 500 ₹ 50 ₹ 20 ₹ 20 ₹ 5


₹ 500	x	1	=	₹ 500
₹ 50	x	1	=	₹ 50
₹ 20	x	2	=	₹ 40
₹ 5	x	1	=	₹ 5
Total			=	₹ 595



₹ 325 = ₹ 100 ₹ 100 ₹ 100 ₹ 20 ₹ 5


₹ 100	x	____	=	____
₹ 20	x	____	=	____
₹ 5	x	____	=	____
Total			=	____



₹ 660 = ☐ ☐ ☐ ☐




Convert ₹ 23 into paise.

₹ 1 = 100 p

₹ 23 = 23 × 100 p

₹ 23 = 2300 p

To change ₹ into p multiply by 100

Convert ₹ 35.75 into paise.

₹ 35. 75

Step 1

₹ 35 = 35 × 100 p

= 3500 p

Step 2

3500 p

+ 75 p

= 3575 p

₹ 35. 75 = 3575 p

Convert 600 p into ₹

100 p = ₹ 1

600 ÷ 100 = 6

600 p = ₹ 6

Express 750 p into ₹

750 p = 700 p + 50 p

= ₹ 7 + 50 p

750 p = ₹ 7.50

Practice

Convert the following.

1) ₹ 2 = _____ p.

2) ₹ 5 = _____ p.

3) ₹10 = _____ p.

4) ₹ 50 = _____ p.

5) ₹ 65 = _____ p.

6) ₹ 100 = _____ p.

7) 300 p = ₹ 3

8) 700 p = ₹_____

9) 500 p = ₹ _____

10) 1670 p = ₹ 16 .70

11) 950 p = ₹ _____

12) 2540 p = ₹ _____

Addition without Conversion

₹ 24 . 50
+ ₹ 55 . 20
₹ 79 . 70

Step 1:
Add paise
50p + 20p = 70p
Step 2:
Add rupees
₹ 24 + ₹ 55 = ₹ 79

₹ 24 . 25
₹ 42 . 40
+ ₹ 63 . 10
₹ 129 . 75

Step 1:
Add paise
25p + 40p + 10p = 75p
Step 2:
Add rupees
₹ 24 + ₹ 42 + ₹ 63 = ₹ 129

Practice

1) ₹ 40 . 75
+ ₹ 25 . 20

2) ₹ 20 . 50
+ ₹ 18 . 15

3) ₹ 12 . 10
+ ₹ 68 . 30

4) ₹ 48 . 30
₹ 67 . 25
+ ₹ 32 . 15

5) ₹ 51 . 15
₹ 34 . 25
+ ₹ 48 . 30

6) ₹ 95 . 30
₹ 58 . 20
+ ₹ 71 . 25

Addition with Conversion

₹ 80 . 85
+ ₹ 65 . 75
₹ 146 . 60

Step 1:

Add the paise

85p + 75p = 160p = ₹ 1.60

Step 2:

Add the rupees

₹ 1 + ₹ 80 + ₹ 65 = ₹ 146

₹ 54 . 25
₹ 42 . 45
+ ₹ 63 . 70
₹ 160 . 40

Step 1:

Add the paise

25p + 45p + 70p = 140p = ₹ 1.40

Step 2:

Add the rupees

₹ 1 + ₹ 54 + ₹ 42 + ₹ 63 = ₹ 160

Practice

1) ₹ 145 . 65
+ ₹ 69 . 50

2) ₹ 124 . 50
+ ₹ 215 . 75

3) ₹ 48 . 90
+ ₹ 67 . 60

4) ₹ 87 . 85
+ ₹ 96 . 95

5) ₹ 74 . 35
₹ 27 . 75
+ ₹ 61 . 50

MATHEMATICS

Stationery shop

Yokesh bought a pencil box for ₹ 24.50 and a pen for ₹ 15.50. Find the total amount paid.

Cost of a pencil box	=	₹ 24 . 50
Cost of a pen	=	+ ₹ 15 . 50
Total cost	=	₹ 40 . 00

The amount paid by him = ₹ 40

Practice

1) Chandra bought notebooks for ₹ 55.50 and pen for ₹ 73.50. Find out the total amount she paid.

2) Ravi bought bread for ₹ 18 and Jam bottle for ₹ 12.50. How much did he spend in all ?

3) Vinisha bought chapathi for ₹ 25.50 and a fruit juice for ₹ 15.50. How much should she pay ?

Subtraction with Conversion

₹ 52 . 20
− ₹ 38 . 75
₹ 13 . 45

Step 1:

Subtract paise

75 p cannot be subtracted from 20 p.

So, take ₹ 1 from ₹ 52.

Now ₹ 1 = 100 p

100p + 20p = 120p.

120p – 75p = 45p.

Step 2:

Subtract rupees

₹ 51 – ₹ 38 = ₹ 13

Practice

1)
₹ 75 . 65
− ₹ 28 . 30

2)
₹ 92 . 50
− ₹ 48 . 10

3)
₹ 42 . 25
− ₹ 24 . 40

4)
₹ 34 . 60
− ₹ 15 . 85

5)
₹ 64 . 10
− ₹ 36 . 95

6)
₹ 83 . 50
− ₹ 33 . 75

Life-related problems

Arun bought a book for ₹ 24 . 50 and a pen for ₹ 18 . 50. How much amount did he spend more to buy a book?

Cost of a book = ₹ 24 . 50

Cost of a pen = – ₹ 18 . 50

₹ 6 . 00

Aruna spent ₹ 6 more to buy a book.

Fruit stall

Rani bought fruits for ₹ 45 . 50. She gave ₹ 100 to the seller. How much did she get it back?

Amount given to the seller = ₹ 100 . 00

Cost of fruits = – ₹ 45 . 50

Amount she got back = ₹ 54 . 50

Practice

1. Seetha bought family pack icecream for ₹ 230 . 50. She gave ₹ 500 to the shop keeper. Find the balance amount.
2. Prakash bought a cake and a cherry packet for ₹ 97 . 50. The cost of a cake is ₹ 49 . 50. Find the cost of a cherry packet.

Multiple cost

Ramesh bought 3 kg of laddus at the rate of ₹ 150 per kg. Find the amount paid by him.

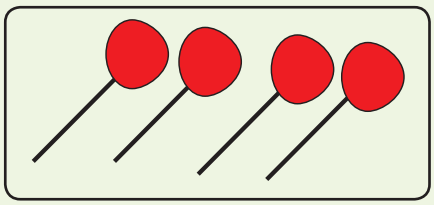
Cost of 1 kg of laddus = ₹ 150

Cost of 3 kg of laddus = ₹ 150 × 3

Cost of 3 kg of laddus = ₹ 450

Ramesh spent the amount = ₹ 450

Cost of a lollipop is ₹ 2 . 50. Find the cost of 4 lollipops.



Cost of 1 lollipop = ₹ 2 . 50

Cost of 4 lollipops = ₹ 2 . 50

× 4

10 . 00

Cost of 4 lollipops = ₹ 10

Step 1:

Multiply paise

50p × 4 = 200p = ₹ 2

Step 2:

Multiply rupees

₹ 2 × 4 = ₹ 8 and

adding with ₹ 2 = ₹ 10

MATHEMATICS

Unit cost

Five friends went to a theme park. They paid ₹ 850 towards the entry fee. Find the amount paid by each.

Total amount given by them = ₹ 850

Number of persons = 5

Amount paid by each person = ₹ 850 ÷ 5

= ₹ 170

```
      170
  5 | 850
      5
      35
      35
       0
```

Practice

1) Rajan bought 3 litres of coconut oil at ₹ 150 per litre. Find the total cost paid by Rajan.

2) Priya bought 8 bananas for ₹ 32. Find the cost of one banana.

3) If 6 apples cost ₹ 108, how much will one apple cost ?

4) Vijaya bought 35 eggs at ₹ 3 per egg. Find the total cost.

Estimate to the nearest rupees

Amount	Estimated cost	Reason
₹ 15 . 20	₹ 15	20 paise is less than 50 paise
₹ 18 . 80	₹ 19	80 paise is more than 50 paise

Estimate

* Vivek bought a soap cake for ₹ 22.40, a tooth brush for ₹ 18.70 and tooth paste for ₹ 35.50. He prepared the estimation to close the nearest one rupee.

Items Purchased	Actual cost	Estimated cost	Difference in paise
Soap cake	₹ 22 . 40	₹ 22	40 p
Tooth brush	₹ 18 . 70	₹ 19	30 p
Tooth paste	₹ 35 . 50	₹ 36	50 p
Total	₹ 76 . 60	₹ 77	-

* Leena wants to make rava sweets. She wants to estimate the expenditure to the nearest ten rupees. She draws the following estimation table.

Items required	Quan-tity	Actual cost ₹	Estimated cost ₹	Difference in ₹
Rava	1 kg	₹ 33	₹ 30	₹ 3
Sugar	1 kg	₹ 47	₹ 50	₹ 3
Cashewnuts	250 g	₹ 54	₹ 50	₹ 4
Ghee	100 g	₹ 28	₹ 30	₹ 2
Total		₹ 162	₹ 160	-

Practice

1) Lalitha bought perfume for ₹31.35, hair clips for ₹23.40 and talcum powder for ₹48.60. Estimate the total and find the difference, close to the nearest one rupee.

2) Siva bought balloons for ₹ 27, colour paper for ₹ 41 and wall picture for ₹ 63. Find the estimated cost and difference in estimation, close to the nearest ten rupee.

Lab activity

- Materials and their cost are given.
- you have ₹ 500.
- List out different ways you have to select the materials within ₹ 500.

₹ 15

₹ 120

₹ 25

₹ 175

₹ 70

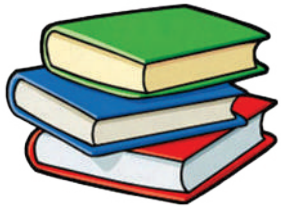
₹ 150

₹ 100

₹ 75

₹ 30

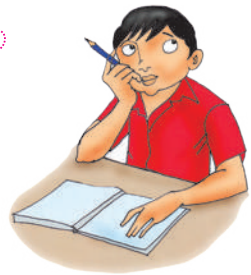
₹ 60



₹ 275

₹ 50

Revision



1) Express rupees into paise.

i) ₹ 3 = _____ p. ii) ₹ 12 = _____ p.

iii) ₹ 75 = _____ p. iv) ₹ 60 = _____ p.

2) Express paise into rupees.

i) 700 p = ₹_____ ii) 1900 p = ₹ _____

iii) 800 p = ₹ _____ iv) 2600 p = ₹ _____

3) i) ₹ 35 . 75 ii) ₹ 73 . 25 iii) ₹ 13 . 50

+ ₹ 40 . 50 + ₹ 81 . 50 + ₹ 45 . 75

4) i) ₹ 75 . 50 ii) ₹ 47 . 25 iii) ₹ 77 . 50

– ₹ 13 . 25 – ₹ 17 . 50 – ₹ 52 . 75

5) Estimate to the nearest rupees.

₹ 17.25 is estimated as ₹ _____

₹ 79.79 is estimated as ₹ _____

6) Write the denominations for ₹ 975.

7) Raju bought apples and mangoes for ₹ 96.50. Cost of the apples is ₹ 53.50. Find the cost of the mangoes.

8) Cost of a pencil is ₹ 4. Find out the cost of 56 pencils.

9) Cost of a kerchief is ₹ 5.50. What is the cost of 8 kerchiefs ?

10) Cost of four pens is ₹ 128. Find out the cost of a pen.

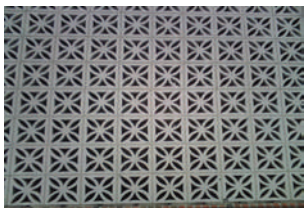
11) If 4 toys cost ₹ 560, how much will be the cost of a toy ?

5. PATTERNS

Observe the patterns in geometry

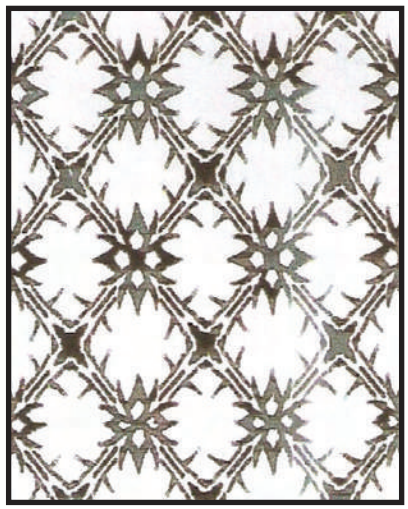
Ceramic tiles

Cement blocks

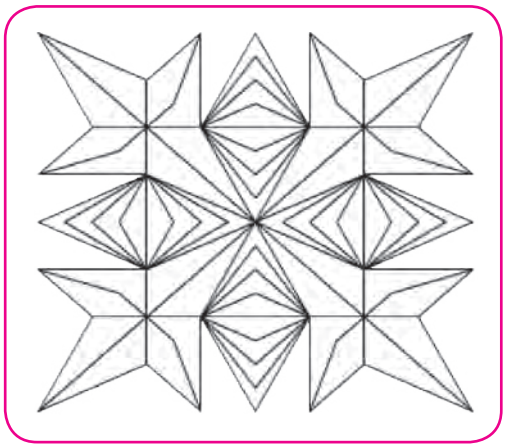


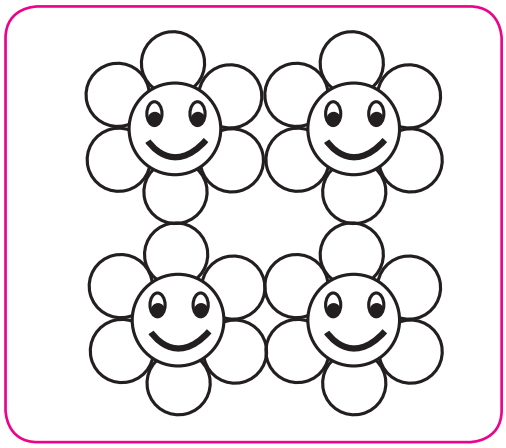
Patterns are found in nature, in science, in buildings and in mathematics. Patterns in nature are leaves and rocks. Patterns in buildings are shown in the above ceramic tiles and cement blocks.

Colour the given geometrical patterns.



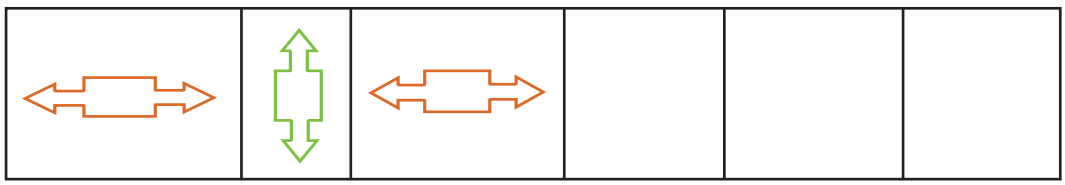
By joining the 4 tiles one geometrical pattern is formed. Colour it.



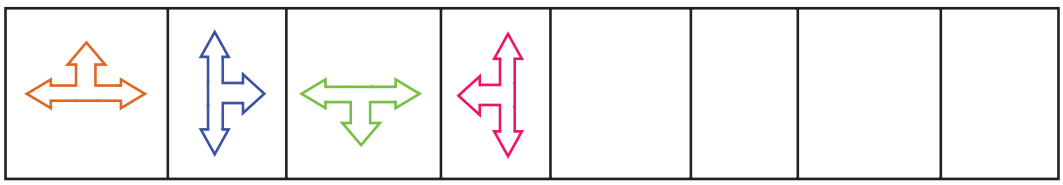


Complete the geometrical pattern.

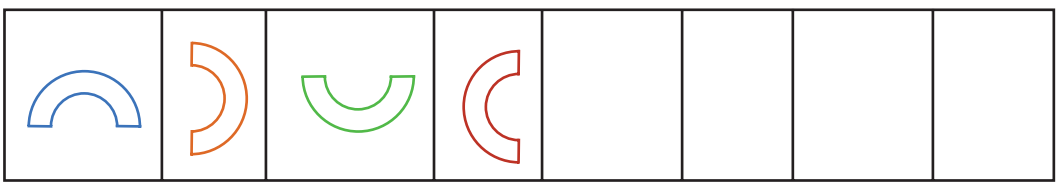
1)



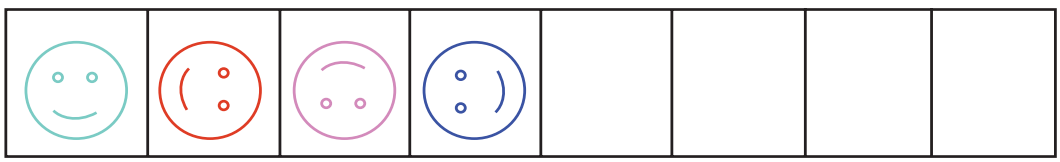
2)



3)



4)



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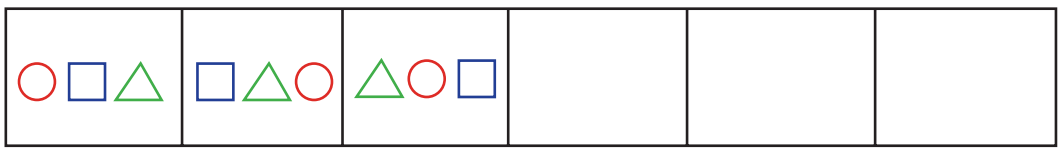
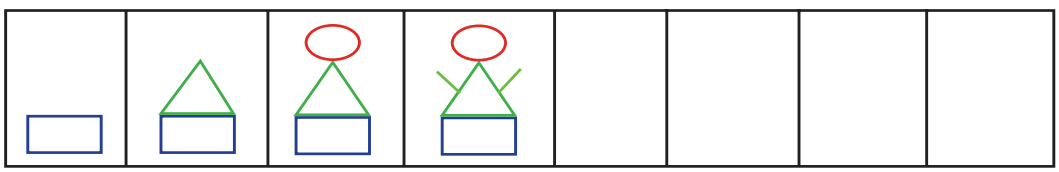


6)



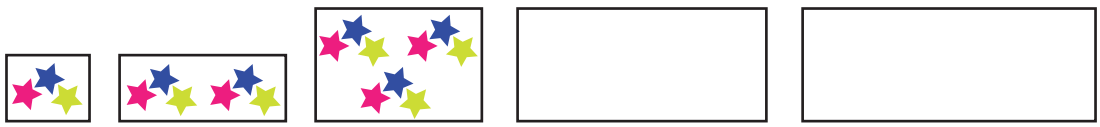
Patterns in Numbers

Complete the pattern and write the numbers.

1.

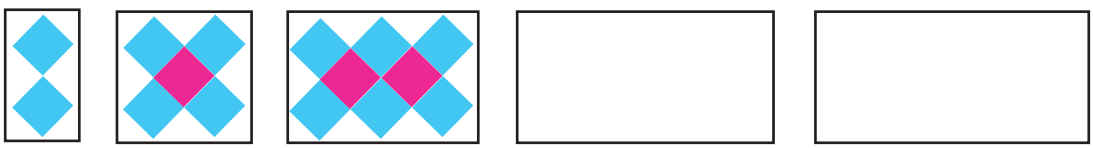
1 3 5 ___ ___ ___

2.



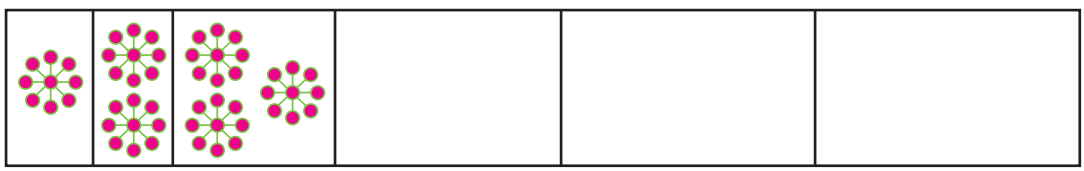
3 6 9 ___ ___

3.



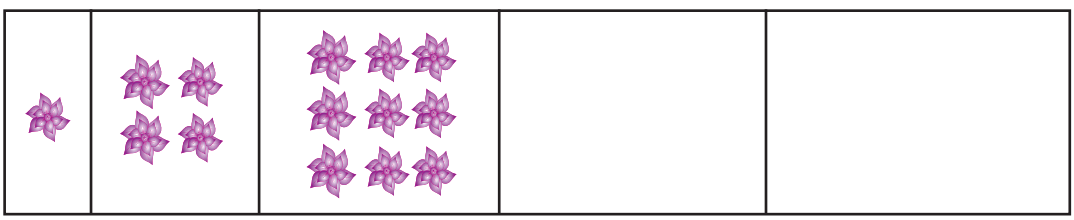
2 5 8 ☐ ☐

4.



9 18 ☐ ☐ ☐ ☐

5.



1 2 + 2 3 + 3 + 3 ☐ ☐

Pattern is a set of shapes or numbers that are repeated again and again.

Number patterns in addition and subtraction

1) Observe the number patterns and fill in the blanks.

1 + 3 + 5 = 09

3 + 5 + 7 = 15

5 + 7 + 9 = 21

7 + 9 +11= 27

9 + 11 + 13 = _____

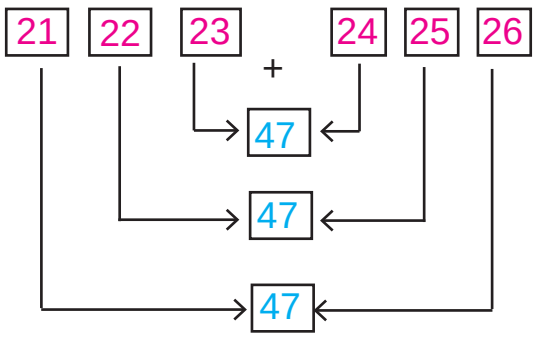
_____

_____

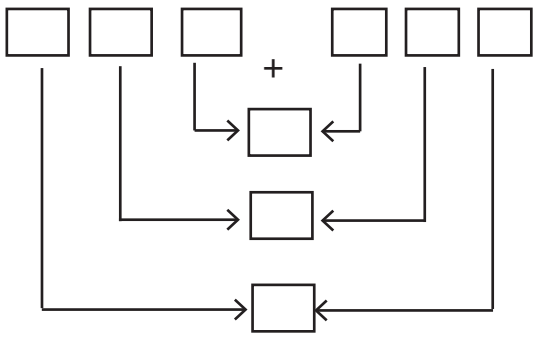
15 + 17 +19 = _____

9, 15 , 21 , 27, ___ , ___ , ___ , ___

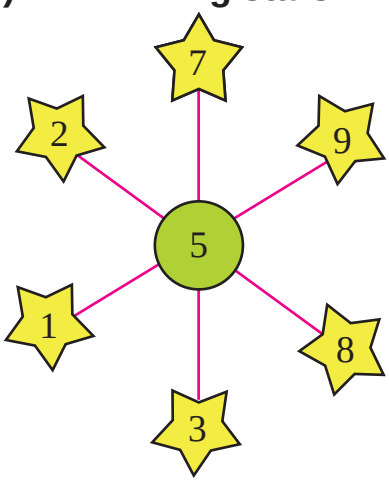
2) Six number cards are taken in order and two numbers are added as shown below.



In the same way, take any six number cards in order and check the total.



3) Twinkling stars



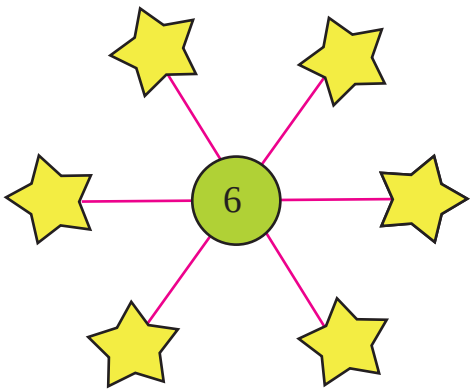
In the given figure add the numbers in a straight line.

1 + 5 + 9 = 15

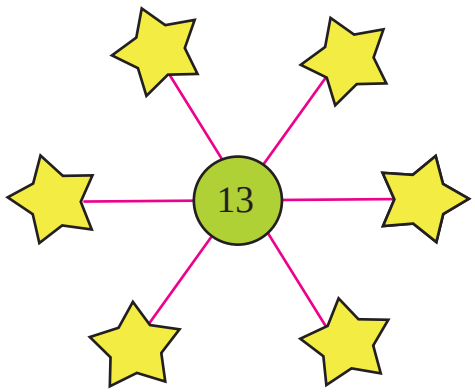
2 + 5 + 8 = 15

3 + 5 + 7 = 15

Fill in the following stars using the numbers given below to arrive at the same total.

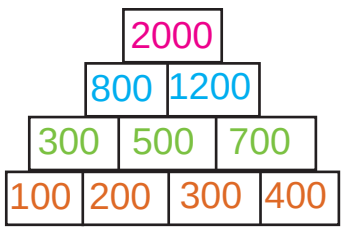


Sum is 18. Use the numbers 3, 4, 5, 7, 8 and 9

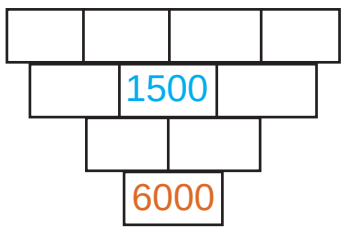


Sum is 23. Use the numbers 9, 8, 7, 3, 2 and 1

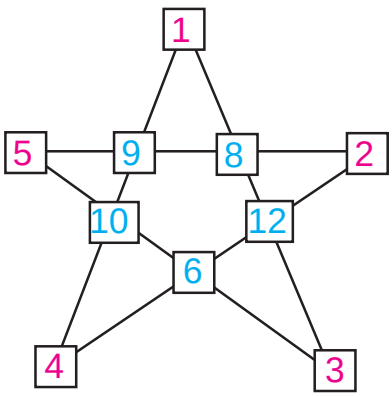
4) **Build the blocks with numbers.**



Complete the blocks.

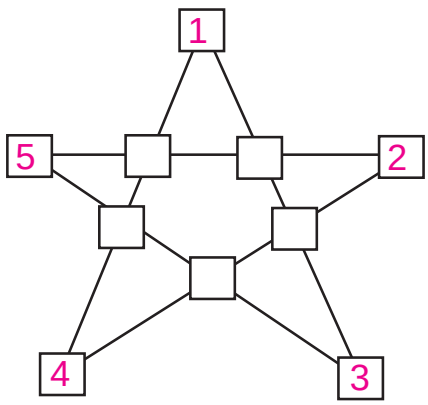


5) **Magic star.**



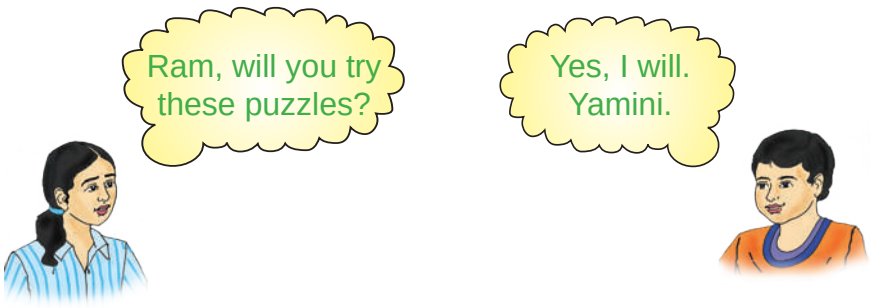
Sum of the numbers in each straight line is 24

Complete the magic star.



Sum is 30. Use the numbers 9, 11, 12, 13 and 15 in the empty boxes.

Fun with number patterns



Write the numbers from 1 to 9 and reverse the order, add and observe.

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

Do you find any pattern? Oh yes, one is repeated nine times followed by 0.

Write the numbers from 2 to 9 and reverse the order as shown and add. Enter the result and your findings.

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

Observe the number patterns and complete it.

(2 x 2) – (1 x 1) = 3 = 2 + 1

(3 x 3) – (2 x 2) = 5 = 3 + 2

(4 x 4) – (3 x 3) = 7 = 4 + 3

(5 x 5) – (4 x 4) = ____ = ____

(6 x 6) – (5 x 5) = ____ = ____

(7 x 7) – (6 x 6) = ____ = ____

Fill in the table by increasing and decreasing 10 or 100.

826	726			426		226	
900			870	860			
310	320						380
	106	206					

MATHEMATICS

Number patterns in multiplication and division

Observe the following pattern and complete it.

1)

2)

1000, 500	1100, 550	1200,___	1300,___	1400,___	1500,___

3)

20 x 9, 18 x 10	30 x 9, 27 x 10	40 x 9, _____
50 x 9, _____	60 x 9, _____	70 x 9, _____

4)

2	4	8	16				
2	6	18	54				
2	8	32	128				
2	10	50	250				
2	12						

5) **Magic square.**

Take three multiples of ten say, 10, 30 and 50. Arrange the numbers as shown. Add the numbers in a straight line. The total is 90.

30	10	50
50	30	10
10	50	30

\+

30
10
50
90

Complete the magic square.

In the same way, take any three multiples of ten, Arrange the numbers in squares such that when the numbers are added in a straight line or crosswise the total must be the same.

Number patterns in multiples of nine

Complete the 9th table.

1	x	9	=	9
2	x	9	=	18
3	x	9	=	27
4	x	9	=	----
5	x	9	=	----
6	x	9	=	54
7	x	9	=	63
8	x	9	=	----
9	x	9	=	----
10	x	9	=	----

What happens when you add the digits in the product?

Total is 9

Complete the addition.

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

The digits in ones place are 9, 8, 7, 6, 5, 4, 3, 2 and 1. They are in decreasing order.

The digits in tens place are 1, 2, 3, 4, 5, 6, 7, 8 and 9. They are in increasing order.

Record your observations after adding and check your findings.

- Sum of the digits of the product is _____
- The digits in tens place _____
- The digits in ones place _____
- The digits in tens place are in _____ order.
- The digits in ones place are in _____ order.

Fun with 9

Take any three digit number	736
Multiply by 9	736 x 9 = 6624
Add the digits in the product	6 + 6 + 2 + 4 = 18
until a single digit is found	1 + 8 = 9

Practice

1) 437 x 9 = _____ 2) 336 x 9 = _____ 3) 167 x 9 = _____

Grouping into nine

Teacher gave 41 pencils to Vishal and 36 to Varsha. Ask them to make bundles so that each bundle has 9 pencils.






Vishal had 5 extra pencils after bundling 41 pencils into 4 bundles

Varsha bundled 36 pencils into 4 bundles. There is no extra pencil.

Casting out nine

Complete the following.

81 – 9 = 72	⇨	7 + 2 = 9
72 – 9 = 63	⇨	6 + 3 = 9
63 – 9 = 54	⇨	_____
54 – 9 = 45	⇨	_____
45 – 9 = 36	⇨	_____
36 – 9 = 27	⇨	_____
27 – 9 = 18	⇨	_____
18 – 9 = 09	⇨	_____
09 – 9 = 00	⇨	_____

When 9 is subtracted from multiple of 9, the remainder is a multiple of 9. The sum of the digits in the remainder is 9.

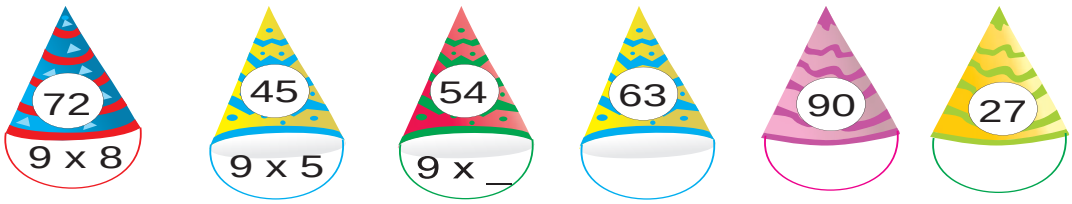
89 – 9 = 80	⇨	8 + 0 = 8
80 – 9 = 71	⇨	7 + 1 = 8
71 – 9 = 62	⇨	_____
62 – 9 = 53	⇨	_____
53 – 9 = 44	⇨	_____
44 – 9 = 35	⇨	_____
35 – 9 = 26	⇨	_____
26 – 9 = 17	⇨	_____
17 - 9 = 08	⇨	_____

When 9 is subtracted from other than multiple of 9, the remainder is not a multiple of 9. The sum of the digits in the remainder is less than 9.

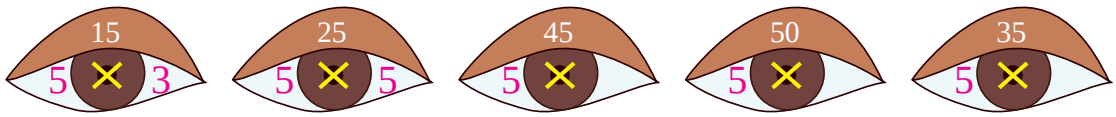
Practice

Fill in the following blanks.

1)

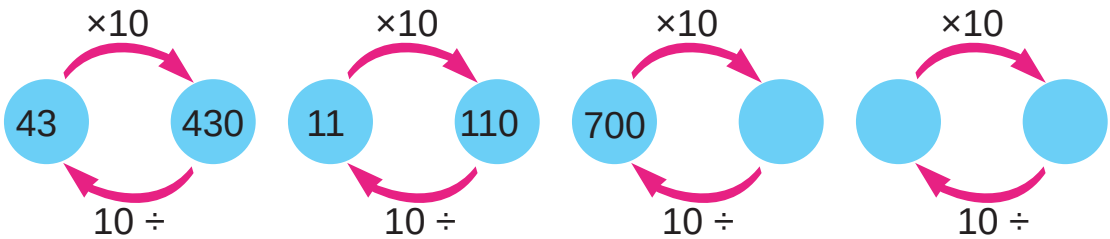


2)



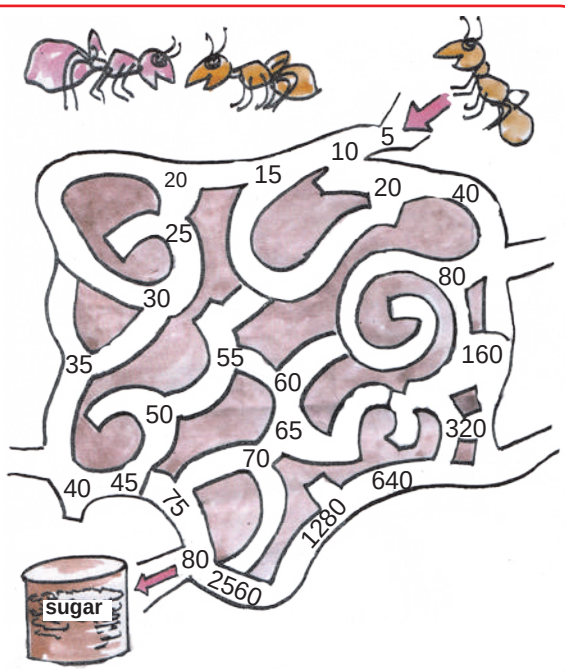
3)

4)



Puzzle

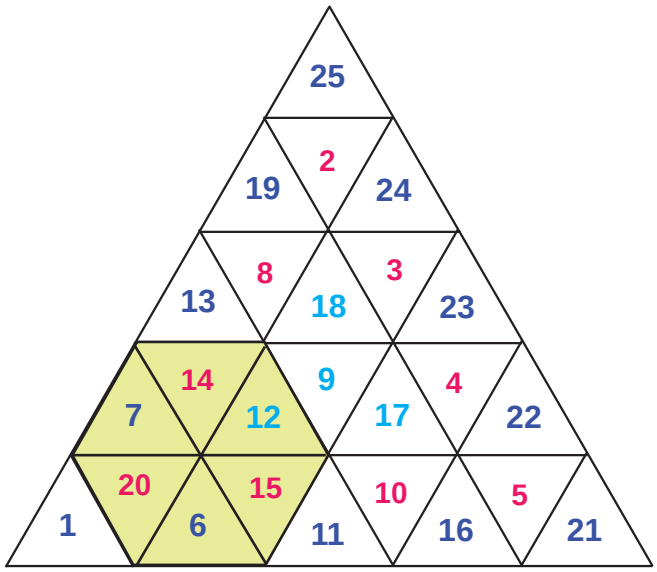
Two paths are described using numbers. Show the paths for the ants to reach the sugar pot. Write the number patterns.



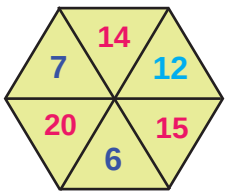
Lab activity

Look at the numbers given in the triangle.

The numbers from 1 to 25 are given in pattern.



Take the numbers coloured in the shape and add.

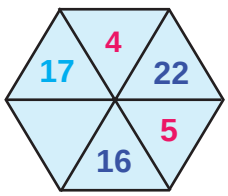


7 + 14 + 12 + 15 + 6 + 20 = 74

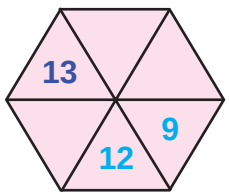
7
14
12
15
6
+ 20
74

Fill in the missing numbers to get the total 74 using the shape.

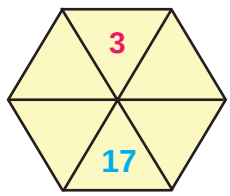
1)



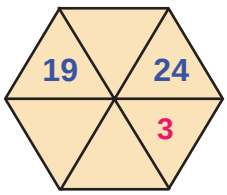
2)



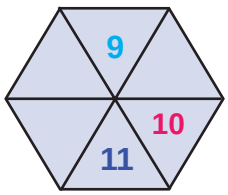
3)



4)



5)



Revision

Complete the number patterns.

1) 9, 19, 29, 39, _____, _____, _____

2) 64, 55, 46, 37, _____, _____, _____

3) 19, 28, 37, 46, _____, _____, _____

4) 121, 222, 323, 424, _____, _____, _____

5) 609, 509, 409, 309, _____, _____, _____

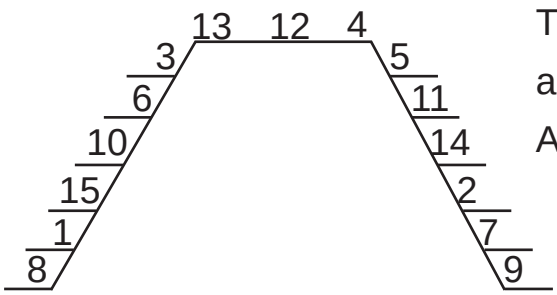
6)

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

Numbers from 1 to 16 are arranged in the square. Find the total of numbers vertically, horizontally and diagonally. Arrange the totals in increasing order. What do you find?

Observe and complete the following.

7)



The numbers from 1 to 15 are arranged in a horse shoe pattern. Add two consecutive numbers.

8 + 1 = 9 = 3 × 3
1 + 15 = 16 = 4 × 4
10 + 6 = 16 = _____
6 + 3 = __ = _____
3 + 13 = __ = _____

12 + 4 = _____ = _____
4 + 5 = _____ = _____
5 + 11 = _____ = _____
14 + 2 = _____ = _____
7 + 9 = _____ = _____

MATHEMATICS

6. DATA HANDLING

Pictograph

Children went to a zoo. They listed the animals seen in the zoo through a pictograph as shown here.

Monkey	
Elephant	
Tiger	
Deer	
Bear	

The number of animals seen by them in the zoo are given below:

1) Number of elephants = 10

2) Number of tigers = 15

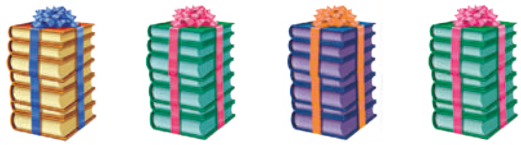
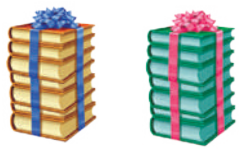
3) Number of bears = 10

4) Number of deers = 25

5) Number of monkeys = 30

Practice

The following pictograph shows the number of books sold in a bookshop in 5 days. Answer the following questions from the pictograph.

Monday	
Tuesday	
Wednesday	
Thursday	
Friday	

 represents 7

1) Number of books sold on Monday _____

2) Number of books sold on Tuesday _____

3) Number of books sold on Wednesday _____

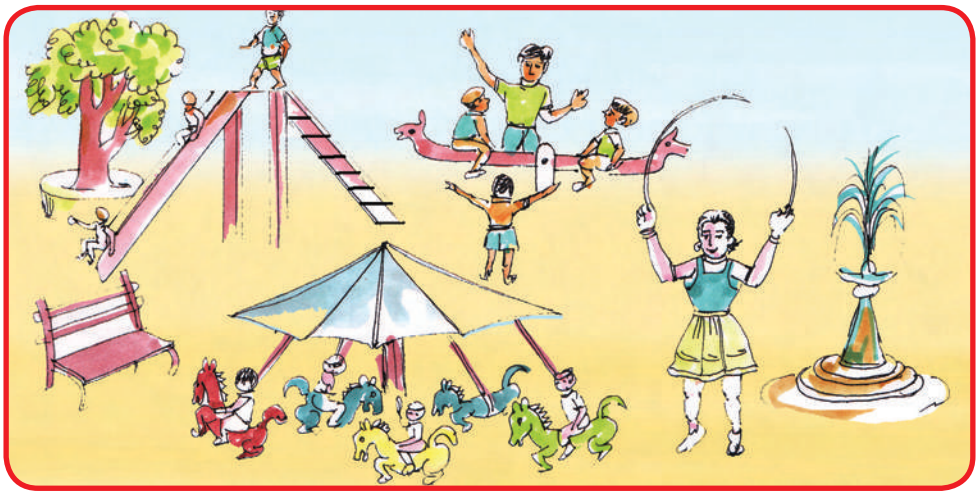
4) Number of books sold on Thursday _____

5) Number of books sold on Friday _____

MATHEMATICS

Pictograph - Another way.

We are in a Park



Children are playing and enjoying in the park.

1) 18 children are playing on the merry-go- round.
2) 12 children are skipping.
3) 16 children are sliding.
4) 2 children are playing in the see-saw.

▭ represents 2 children. We can draw pictograph as follows.

Skipping	▭ ▭ ▭ ▭ ▭ ▭
Slider	▭ ▭ ▭ ▭ ▭ ▭ ▭ ▭
See-saw	▭
Merry-go-round	▭ ▭ ▭ ▭ ▭ ▭ ▭ ▭ ▭

Representation of information by pictures is called a **pictograph.**

Our favourite food.



Fill in the blanks using the pictograph given below.

▲ represents 3 children.

Idly	▲ ▲ ▲
Dosa	▲ ▲ ▲ ▲ ▲
Pongal	▲ ▲ ▲
Aappam	▲ ▲

1) ___ children like idly.
2) ___ children like dosa.
3) ___ children like pongal.
4) ___children like aappam.
5) ___ is liked by many children.

Complete the pictograph.

Colourful shirts

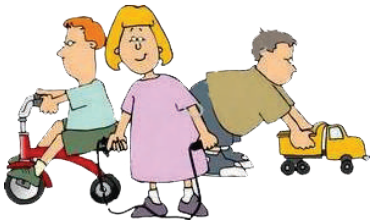
There are 40 yellow shirts, 20 blue shirts, 30 orange shirts and 60 green shirts in a textile shop.

■ represents 10 shirts.

Yellow shirts	■ ■ ■ ■
Blue shirts	
Orange shirts	
Green shirts	

Circle chart

Children are playing with toys.



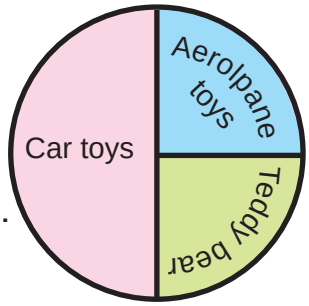
40 children are playing with toys.

Half of them are playing with car toys.

Quarter of them are playing with aeroplane toys.

One - fourth of them are playing with teddy bear toys.

This data is shown by the circle chart.



From the circle chart :
20 children are playing with car toys.
10 children are playing with aeroplane toys.
10 children are playing with teddy bear toys.

Complete the circle chart for the following data.

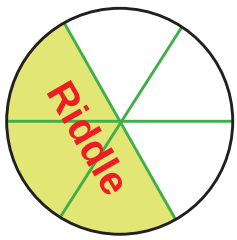
Children's day

60 children participated in three competitions as given below.

30 of them participated in riddle competition.

20 of them participated in drawing competition.

10 of them participated in fancy dress competition.



Collection of data

Medal list of first five places of countries that participated in the Commonwealth Games held in New Delhi 2010.

Country	Gold	Silver	Bronze	Total
Australia	74	55	48	
India	38	27	36	
England	37	59	46	
Canada	26	17	32	
South Africa	12	11	10	

Answer the following from the table.

- Which country was in second place?
- Find the total medals of country viz.
- Which country got maximum medals?

Information collected in the form of numbers is called data.

Project

Write the number of students studying in your school.

Name of the school:			Date:
Std	Boys	Girls	Total
I			
II			
III			
IV			
V			
Total			

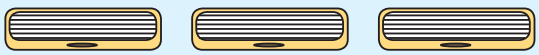
Answer the following from the table.

- Which class has more number of students? _____
- Which class has more number of boys? _____
- Total number of students is _____

Practice

1) Look at the pictograph and answer the questions.

Electronic items sold in a month in an electronic shop.

Television	
Air conditioner	
Refrigerator	

 Each represents 20.

- How many televisions were sold?
- How many air conditioners were sold?
- How many refrigerators were sold?
- Which electronic item was sold more?

2) Prepare a pictograph for the following data. In a party children ate 48 laddus, 56 jangiris, 64 gulabjamuns and 80 mysorepa.

 Each represents 8

3) If  represents 10 vehicles prepare a pictograph for 50 cars, 30 motor bikes, 40 bicycles and 30 lorries are manufactured in a factory.

4) There are 60 children in a class. 15 students are girls and the remaining are the boys. Draw a circle chart.

5) There are 320 houses in a colony. Half of the houses are painted in two different colours. One fourth of the houses are painted in three different colours. The remaining houses are painted in many different colours. Prepare a circle chart.

MATHEMATICS

Revision

1) Children are coming to a school by walk, by bus and by bicycle. Answer the question from the pictograph given.

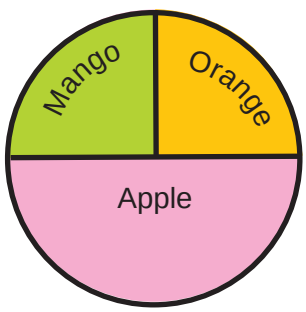
Walk	
Bus	
Bicycle	

 represents 5

- _____ children come to school on foot.
- _____ children come to school by bus.
- _____ children come to school by bicycle.
- Most of the children come to school by ____.

2) An author has 120 Tamil story books, 30 English story books, 90 Hindi story books and 80 Urdu story books. Prepare a pictograph.

3)



A Fruit Juice vendor uses 100 fruits for making juice. Number of fruits used are given by circle chart. Find the number of mangoes, oranges and apples.

4) In a residential apartment, $\frac{1}{5}$ of people have car, $\frac{3}{5}$ of people have motor cycle and the remaining people have bicycle. The total number of people is 500. Draw a circle chart and find out the number of people who have car, motor cycle and bicycle.

‘I can, I did’

Student’s Activity Record

Subject:

Sl. No	Date	Lesson No.	Topic of the Lesson	Activities	Remarks