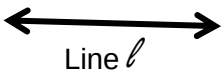
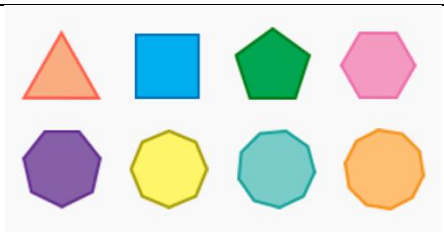
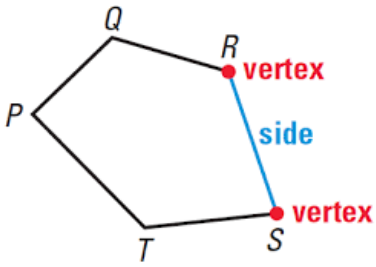
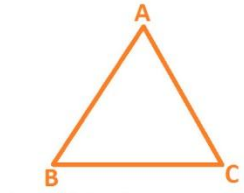
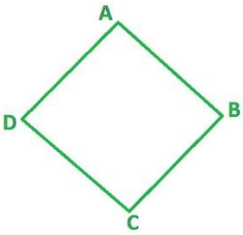
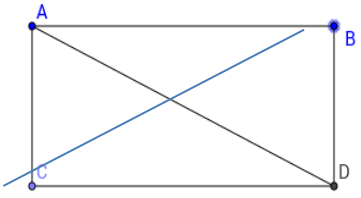
SHREERAM MODEL SCHOOL

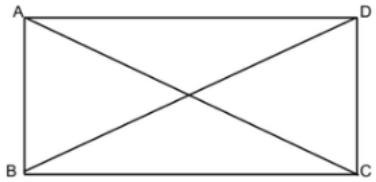
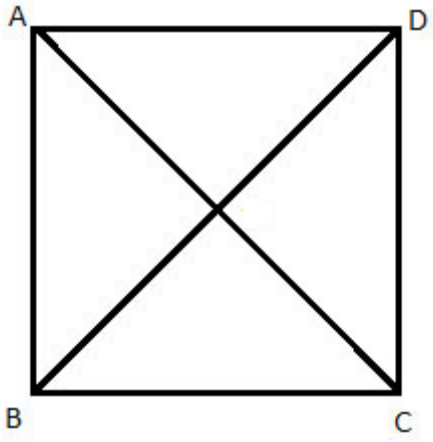
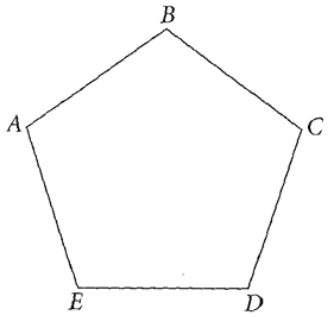
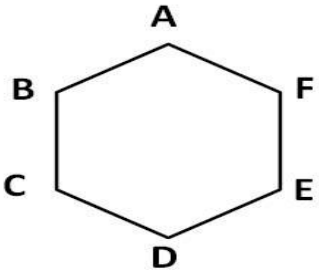
CLASS: IV MATHS (CH-11)

GEOMETRICAL CONCEPTS(CHAPTER EXPLAINATION + WORKSHEETS)

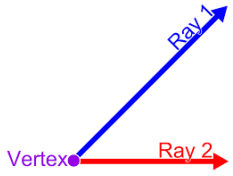
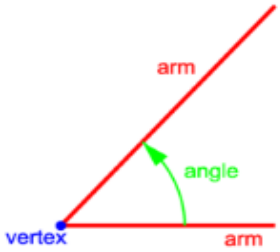
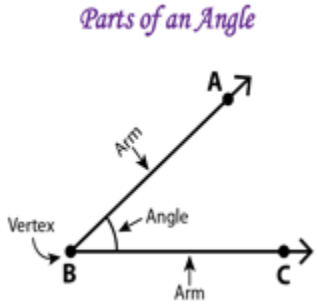
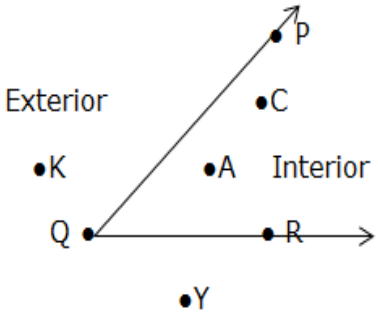
Point	 POINT A	A point is a dot made by a sharp point of a pencil. It is represented by English Capital letter.
Line Segment	 A B	A line segment has two end points. It has a definite length. We write it as $\overline{AB}$ or $\overline{BA}$
Line	 Line ℓ	A line has no end points and can be extended endlessly in both the directions. It has no fixed length. We write as AB or  AB
Ray	 A B	A ray is a line which has an initial point but no end point. It can be extended endlessly in one direction. It has no definite length. We write it as ray AB or  AB

POLYGONS

Polygons		A simple closed figure with three or more straight line segments is called a polygon.
		The line segments which form a polygon are called its sides. The point at which two adjacent sides of a polygon meet is called a vertex of a polygon.
Triangle	 Three sided Polygon - Triangle ABC	A polygon with 3 sides is called a triangle. Sides AB, BC, CA (3 sides) Vertices : A, B, C
Quadrilateral	 Four Side Polygon - Quadrilateral ABCD 	A polygon with 4 sides is called a quadrilateral. Sides : AB, BC, CD and DA Vertices: A, B, C, D AD and BC are two diagonals (Line segments) joining the opposite sides.

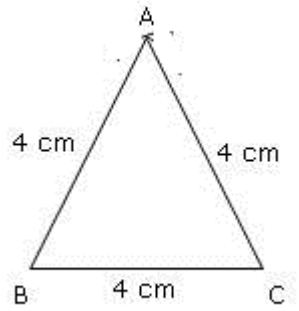
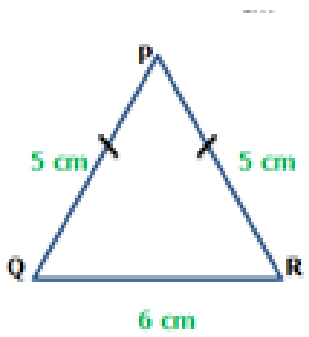
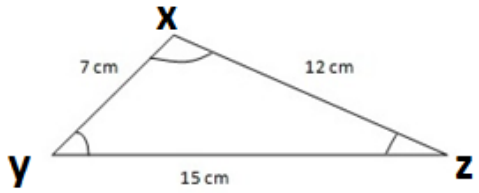
Rectangle		A special type of quadrilateral in which opposite sides and diagonals are equal in length is called a rectangle. ABCD is a rectangle AB= DC; BC = AD (opposite sites) Diagonals: PR = QS
Square		A special type of rectangle in which all the **four sides are equal** is called a square. ABCD is a square in which: AB=BC=CD=DA (sides) Diagonals : BD = AC
Pentagon		A polygon with 5 sides is called a pentagon. ABCDE is a pentagon in which Sides= AB, BC, CD,DE, EA are 5 sides Vertices= A,B,C,D, E
Hexagon		A polygon with 6 sides is called a hexagon. Sides = AB, BC, CD, DE, EF and AF Vertices = A,B,C,D, E, F

ANGLES

Angle	A figure formed by joining two rays at their initial points is called an angle.	
Arms of the angle	The **two rays** which form the angle are called the arms of the angle.	
Vertex of the angle	The point where **the two rays meet** is called the vertex of the angle.	
Symbol of angle		
Interior and Exterior of an Angle	 Points interior of angle PQR - •C, •A Points exterior of angle PQR - •K, •Y	

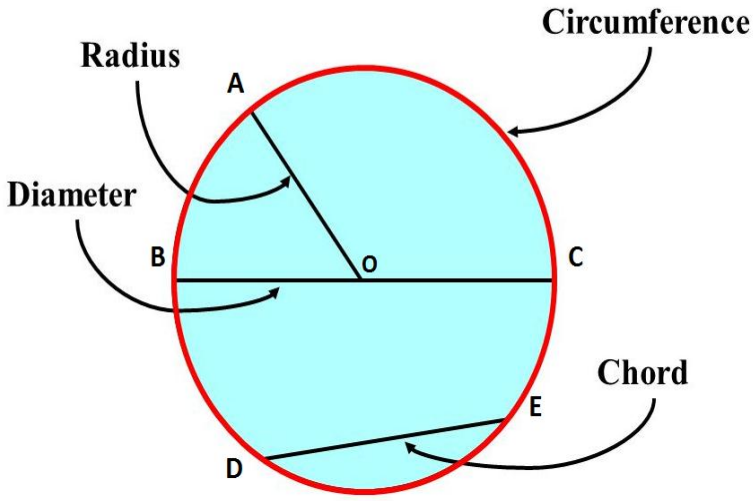
MORE ABOUT TRIANGLES

TRAINGLES ARE CLASSIFIED ON THE BASIS OF THE LENGTHS OF THEIR SIDES.

EQUILATERAL TRIANGLE		A triangle in which **all sides are equal** is called an **equilaterlal triangle**. AB= BC=CA
ISOSCELES TRIANGLE		A triangle in which **two sides are equal** is called an **isosceles triangle.**. Here PQ = PR = 5 cm
SCALENE TRIANGLE		A triangle in which all three sides have **different** lengths is called a **scalene triangle.**

Circle

Parts of a Circle

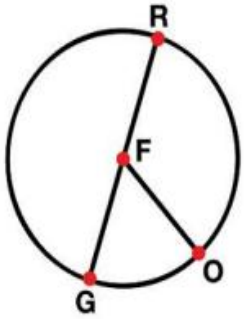


Centre	: O
Radius	: AO,BO
Diameter	: BC
Chord	: DE

Circle	A simple closed curve with only one curved edge and no vertex.
Centre of a circle	A circle has a centre from where the distances of all points of the circle are same. Here center is O
Radius	A line segment from the centre of the circle to any point on the circle is called the radius. A circle has many radii and all radii are equal.
Chord	A line segment joining any two points of a circle is called a chord of the circle.
Diameter of a circle	A chord of a circle passing through its centre is called a diameter of the circle. It is the longest chord of the circle. A circle has infinite number of diameters. Diameter = 2 x radius
Circumference	The length of the boundary of the circle is called circumference.

Worksheet - 01 (CIRCLE)

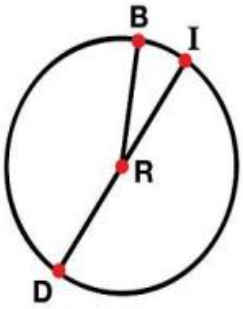
1 **Write the name of each circle, radius, and diameter.**



circle: *F*

radius: *FO*

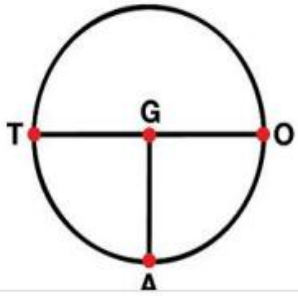
diameter: *RG*



circle: _____

radius: _____

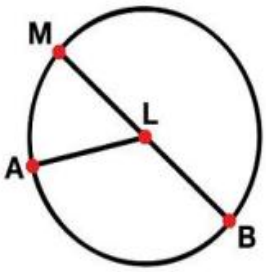
diameter: _____



circle: _____

radius: _____

diameter: _____

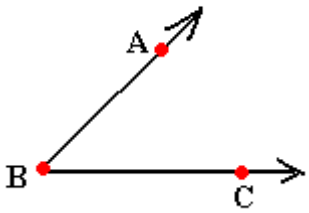


circle: _____

radius: _____

diameter: _____

2.



(i)Name the marked angle. _____

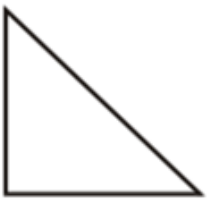
(ii) Name the vertex of the angle._____

(iii) Name the arms of the angle._____

WORKSHEET 2 (Triangles)

Classify the triangles into scalene, isosceles and equilateral according to the length of the sides.

1. 

2. 

3. 

4. 

5. 

6. 

2. **Classify the triangle according to sides, that is, equilateral, isosceles and scalene triangles**

(a) 6 cm, 3 cm, 5cm.

(b) 6 cm, 6 cm, 6 cm.

(c) 7 cm, 7 cm, 5 cm.

(d) 8 cm, 12 cm, 10 cm.

(e) 3 cm, 4 cm, 5 cm.

(f) 3.5 cm, 3.5 cm, 4.5 cm.

WORKSHEET 3 (TYPES OF POLYGONS)

1. Fill in the blanks

(i) The _____has 3 sides and 3 vertices.

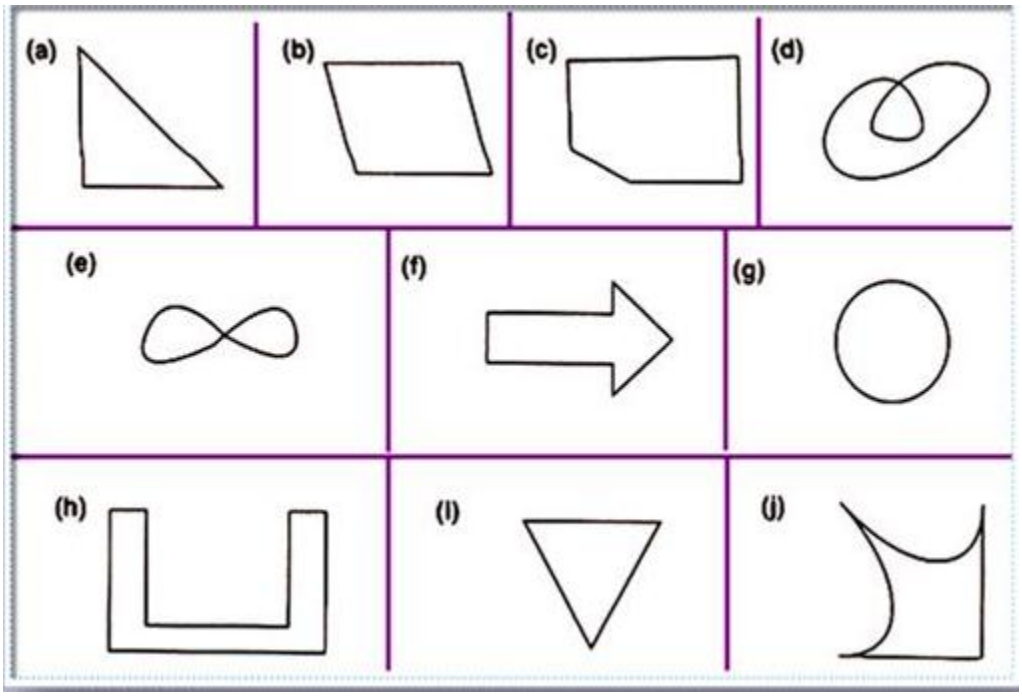
(ii) The _____ has 4 sides and 4 vertices.

(iii) The _____ has 5 sides and 5 vertices.

(iv) The_____has 6 sides and 6 vertices.

(v) The four sides of _____are equal.

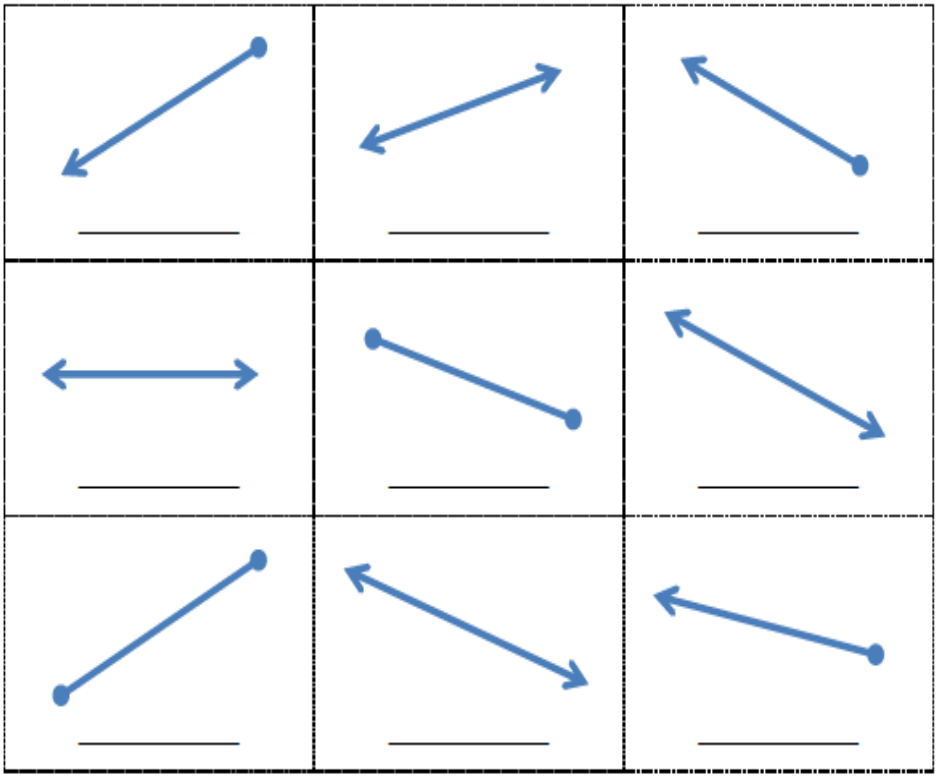
2. Which of the following are polygons?



Worksheet- 4

1.

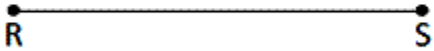
Write "**line**", "**line segment**" or "**ray**" below each picture.



2. Write the name of each of the given figures with its symbol:

(i) 

(ii) 

(iii) 

(iv) 

3. Choose the correct answer

1. A figure formed by two rays with same initial point is known as:

a. a line
b. a line segment
c. a ray
d. an angle

2. Which of the following statements is false?

a. A triangle has three sides
b. A triangle has three angles
c. A triangle has three vertices
d. A triangle has two diagonals

3. By joining any two points of a circle, we obtain its_____

a. radius
b. chord
c. diameter
d. circumference

4. If a radius of a circle is 4 cm, then the length of its diameter is _____

a. 2 cm
b. 4 cm
c. 8 cm
d. 16 cm

5. Which of the following has definite length?

a. a line
b. a ray
c. a line segment
d. none of these