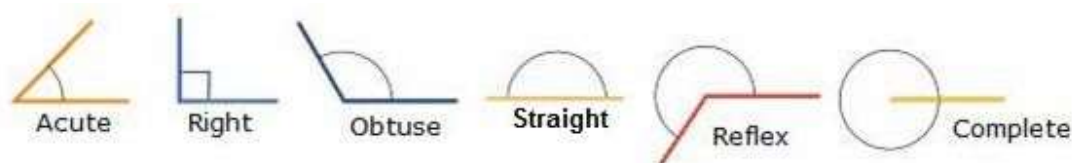# MATHS

Understanding Elementary Shapes

1. The distance between the end points of a line segment is called its length. The lengths of line segments can be compared using a ruler anddivider.

2. The measurement of an angle or its size depends upon the amount of opening between its sides. One complete revolution is divided into 360 equal parts. Each part is adegree.
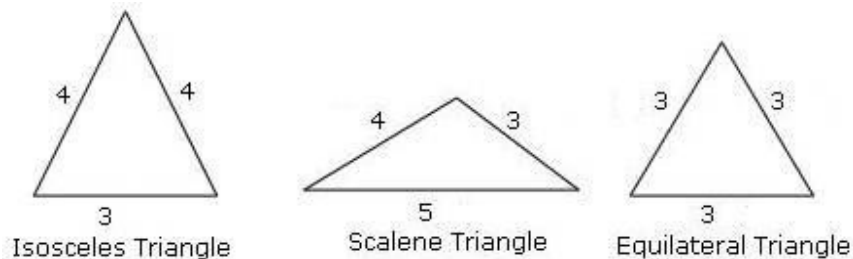
3. Types ofangles

   i. A right angle = 90°, a straight angle = 180°, a complete angle =360°
   ii. 0°< acute angle < 90°< obtuse angle < 180°< reflex angle <360°

4. When two lines intersect and the angle between them is a right angle, then the lines are said to be perpendicular.

5. A triangle is three sided closedfigure.

Classification of Triangles
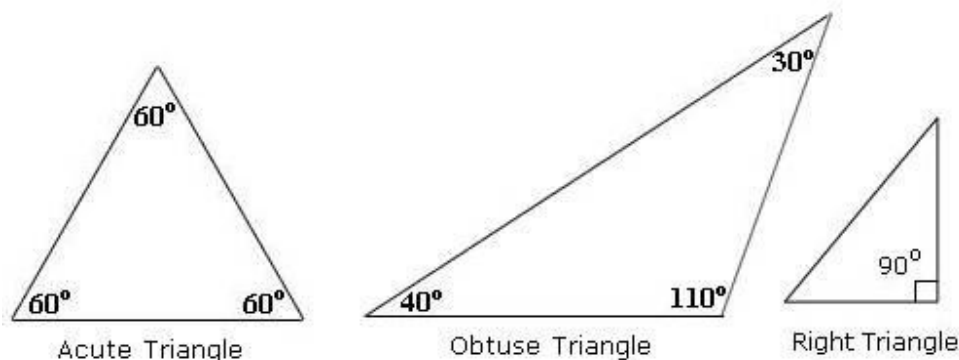
On the basis of sides:
A triangle is said to be
   i. an isosceles triangle if twoof its sides areequal;
   ii. a scalene triangle if all of its three sides are of differentlengths;
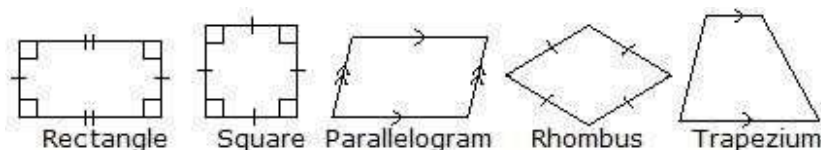   iii. an equilateral triangle if all ofits sides are of equallengths.

On the basis of angles:

A triangle is said to be

   i.   an acute triangle if each one of its angles measure less than 90°;
   ii. an obtuse triangle if one of its angles measure more than 90°;
   iii. a right triangle if one of its angles measure 90°.

60°

60°   60°

Acute Triangle

30°

40°   110°

Obtuse Triangle

90°

Right Triangle

6. A quadrilateral is a four sided polygon. Types of quadrilateral are:

Rectangle   Square   Parallelogram   Rhombus   Trapezium

   i.   A quadrilateral which has exactly one pair of parallel sides is called a trapezium.
   ii. A quadrilateral in which both pairs of opposite sides are parallel is called a parallelogram.
   iii. A parallelogram in which all the sides are equal is called a rhombus.
   iv. A parallelogram in which each angle is a right angle is called a rectangle.
   v.   A parallelogram in which all the sides are equal and each angle is equal to a right angle is called a square.
   vi. A quadrilateral which has two pairs of equal adjacent sides but unequal opposite sides is called a kite.
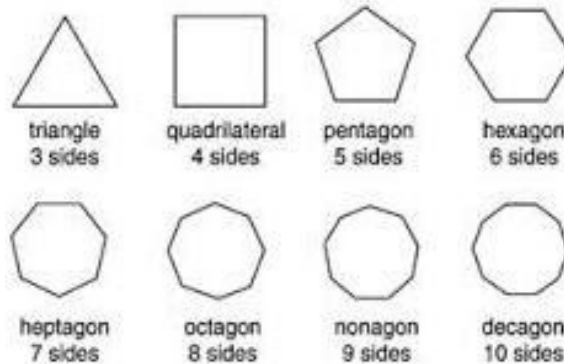
7. A quadrilateral is a parallelogram if
   i.   its opposite sides are equal, or
   ii. its opposite angles are equal, or
   iii. its diagonals bisect each other, or
   iv. it has one pair of opposite sides equal and parallel.

8. The diagonals of a rhombus bisect each other at right angles.
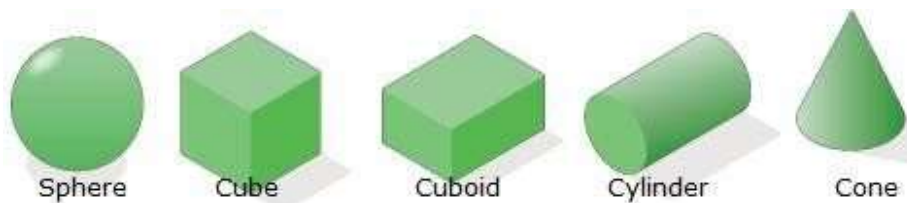
9. The diagonals of a rectangle are equal.

10. The diagonals of a square are equal and they bisect each other at right angles.

11. A closed figure made up of 3 or more sides is called polygon. Some types of polygonsare:

triangle
3 sides

quadrilateral
4 sides

pentagon
5 sides

hexagon
6 sides

heptagon
7 sides

octagon
8 sides

nonagon
9 sides

decagon
10 sides

12. Those shapes which we can see around us are calledthreedimensional   shapes. Some standard 3D shapesare:

Sphere   Cube   Cuboid   Cylinder   Cone

Each side of a solid has a surface called a face.

Two faces meet at a line segment called an edge.

Three edges meet at a point called a vertex.