Construction of Angle

Construction of angles is one of the essential part of geometry. An angle is a shape formed by two rays (called arms of angle) that shares a common point (called vertex). We can use protractor to construct various types of angles. Also, there are methods by which we can construct some specific angles such as 60°, 30°, 120°, 90°, 45°, etc., without using protractor. Hence, these angles can be constructed using a compass and ruler.

Construction of angles using Protractor:

Step 1: Draw a line segment AB

Step 2: Now place the centre of the protractor on point A, such that the line segment AB is aligned with the line of the protractor

Step 3: Starting from 0 (in the protractor) mark the point C in the paper as per the required angle.

Step 4: Join points A and C. ∠BAC is the required angle

Construction of angles using Compass and Ruler

Construction of 60°:

60° is one of the most basic constructions, which facilitates constructing angles of several other measures. The steps are:

Step 1: Draw a line segment. Mark the left end as point O and the right end as point B.

Construction of Angle

Step 2: Take the compass and open it up to a convenient radius. Place its pointer at O and with the pencil-head make an arc which meets the line OB at say, P.



Step 3: Place the compass pointer at P and mark an arc that passes through O and intersects the previous arc at a point, say A.







We get the required angle i.e. ∠**AOB** = 60 degree angle.

Construction of Angle

Construction of 30 degrees Angle (30°)

A 30-degree angle is half of the 60-degree angle.

Follow the same steps as we have used for the construction of 60 degrees angles

Bisect the angle into two equal parts

Each part will be a 30-degree angle

Hence, a 30-degree angle is constructed.



Constructing a 120°

We know that:

 $60^{\circ} + 120^{\circ} = 180^{\circ}$

This means that 120° is the supplement of 60°. Therefore, to construct a 120° angle, construct a 60° angle and then extend one of its arms as shown below.

