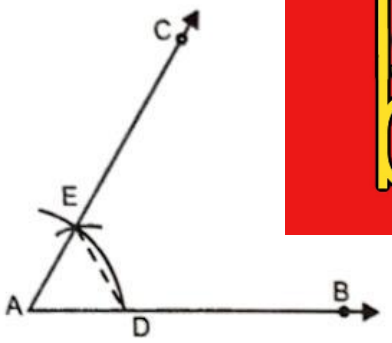
Exercise 5.3

1. Draw an angle of 65° using a protector and bisect it.
2. Construct an angle of 90° and bisect it.
3. Construct $\angle BAC = 30°$ and bisect it.
4. Draw an obtuse angle and bisect it.

Construction 5. To construct an angle equal to given angle (at a point on a given ray).

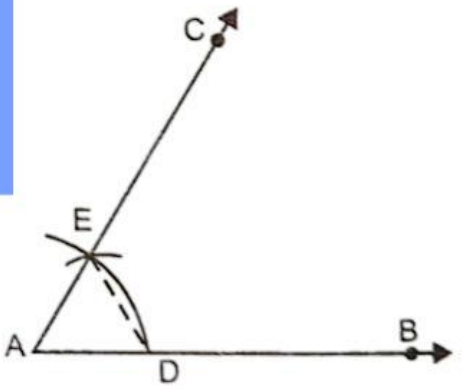
Given. An ∠POQ and a point A on a given ray.
Required: To construct an angle equal to ∠POQ.



Steps of construction:

1. Take a ray AX with initial point A.
2. With A as centre and a convenient radius, draw an arc cutting ray AX at B.
3. With B as centre with the same radius as in step 2, draw an arc cutting the previous arc at C.
4. Join AC and produce it to some point Y, then ∠YAX is the required angle.

Construction 6. To construct an angle of 60° at the initial point of a given ray.
Given: A ray AB with initial point A.
Required: To construct a ray AC such that ∠CAB = 60°.



Steps of construction:

1. With A as centre and convenient radius, draw an arc of a circle which intersects AB say at a point D.
2. With D as centre and with the same radius as before, draw an arc cutting the previous arc, say at E.
3. Draw the ray AC passing through E.
   Then ∠CAB is the required angle of 60°.