Activity 23

Objective

To verify that the angles in the same segment of a circle are equal.

Material Required

Geometry box, coloured glazed papers, scissors, cardboard, white paper and adhesive.

Method of Construction

1. Take a cardboard of suitable size and paste a white paper on it.
2. Take a sheet of glazed paper and draw a circle of radius a units on it [see Fig. 1].
3. Make a cut-out of the circle and paste it on the cardboard.
4. Take two points A and B on the circle and join them to form chord AB [see Fig. 2].
5. Now take two points C and D on the circle in the same segment and join AC, BC, AD and BD [see Fig. 3].
6. Take replicas of the angles $\angle ACB$ and $\angle ADB$.

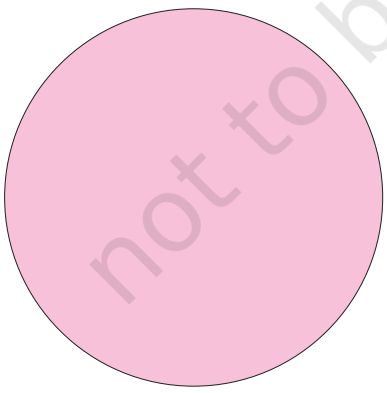

Fig. 1

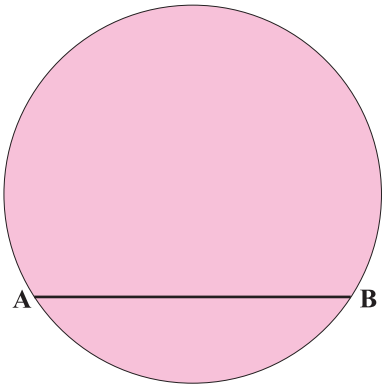

Fig. 2

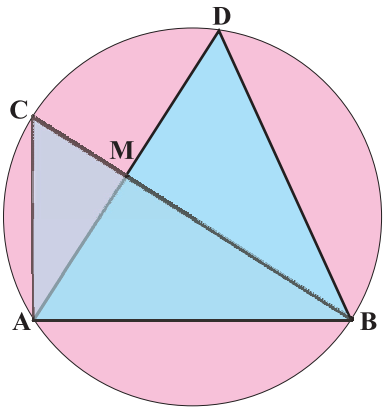

Fig. 3

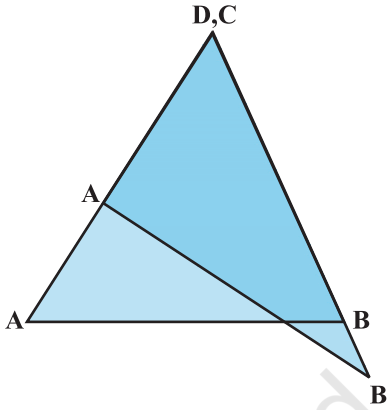

Fig. 4

Demonstration

Put the cut-outs of ∠ACB and ∠ADB on each other such that vertex C falls on vertex D [see Fig. 4]. In Fig. 4, ∠ACB covers ∠ADB completely. So, ∠ACB = ∠ADB.

Observation

On actual measurement:

∠ACB = ----------, ∠ADB = ----------

So, ∠ACB = ∠ADB. Thus, angles in the same segment are ---------.

Application

This result may be used in proving other theorems/riders of geometry related to circles.