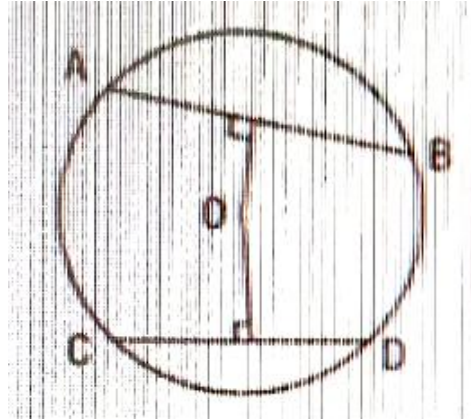


Case Study - 1

Read the following text and answer the question given below:

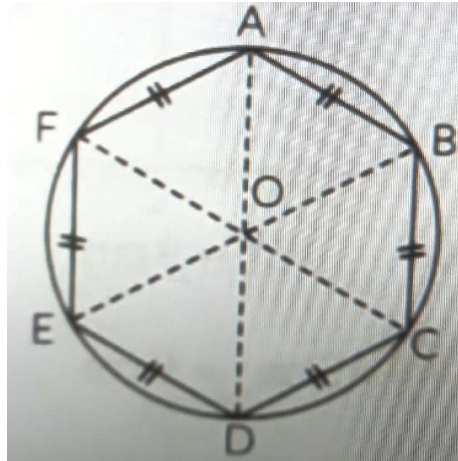
Rohan draws a circle of radius 10 cm with the help of compass and scale. He also draws two chords. AB and CD in such a way that AB and CD are 6cm and 8 cm from the centre O. Now, he has some doubts that are given below. Help him out by answering these questions:



- i) What is the length of AB?
(a) 12 cm (b) 11 cm (c) 16 cm (d) 8 cm
- ii) What is the length of CD?
(a) 10 cm (b) 12 cm (c) 16 cm (d) 21 cm
- iii) A circle divides the plane, on which it lies, in _____ parts
(a) 1 (b) 2 (c) 3 (d) 4
- iv) A quadrilateral is called cyclic if all the four vertices of it lies on a
(a) Circle (b) Pentagon (c) Quadrilateral (d) Triangle
- v) Which statement is not true?
(a) Equal chords of a circle subtend equal angles at the centre
(b) The perpendicular from the centre of a circle to a chord bisects the chord.
(c) Angles in the same segment of a circle are equal.
(d) The sum of either pair of opposite angles of a cyclic quadrilateral is 90° .

Case Study – 2

A small cottage industry employing people from a nearby slum areas prepares industry round table cloths having six equal designs in the six segment formed by equal chords AB, BC, CD, DE, EF and FA. If O is the centre of the round table cloth (see figure).



Now answer the following questions:

- (i) Find the measure of $\angle AOB$.
(a) 90° (b) 70° (c) 80° (d) 60°
- (ii) What is the measure of $\angle AEB$?
(a) 45° (b) 35° (c) 40° (d) 30°
- (iii) If the length of the one chord is 12 cm, then what is the area of the hexagonal shape?
(a) $512\sqrt{3} \text{ cm}^2$ (b) $216\sqrt{3} \text{ cm}^2$ (c) $68\sqrt{3} \text{ cm}^2$ (d) $750\sqrt{3} \text{ cm}^2$
- (iv) What is the area of the circle if the side length of chord is 12 cm?
(a) $132\pi \text{ cm}^2$ (b) $121\pi \text{ cm}^2$ (c) $144\pi \text{ cm}^2$ (d) $81\pi \text{ cm}^2$
- (v) What is the area of the each segment? (Take $\pi = 3.14$ and $\sqrt{3} = 1.73$)
(a) 12.05 cm^2 (b) 13.08 cm^2 (c) 15.03 cm^2 (d) 14.28 cm^2