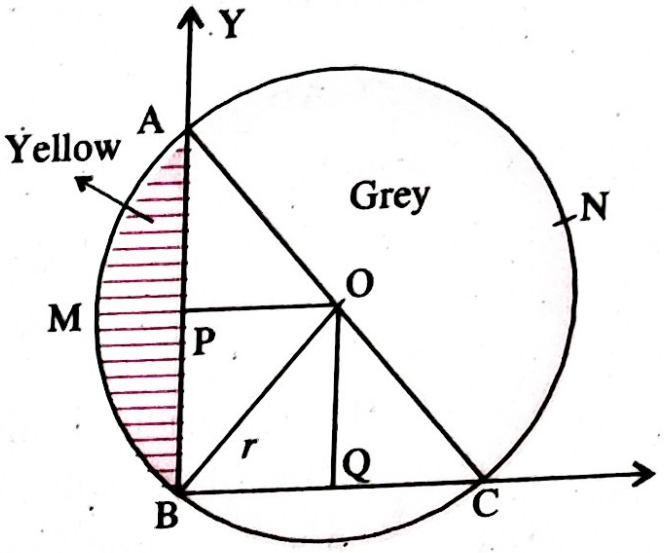
2. **Read the source/Text given below and answer any four questions.**

At class IX C, a teacher Mrs. Rakhi entered in the class. She told students to do some practice on circle chapter. She draws two lines AB and BC so that AB = 8 cm and BC = 6 cm. She told all the students to make the shape in their notebook and draw a circle passing thro′ A, B, C.

1. Daleep drew AB and BC as per the fig.

2. He drew perpendicular bisectors OP and OQ of the lines AB and BC respectively, meeting at O so that O, C and A are collinear.



(*a*) What will you call the line AOC ?

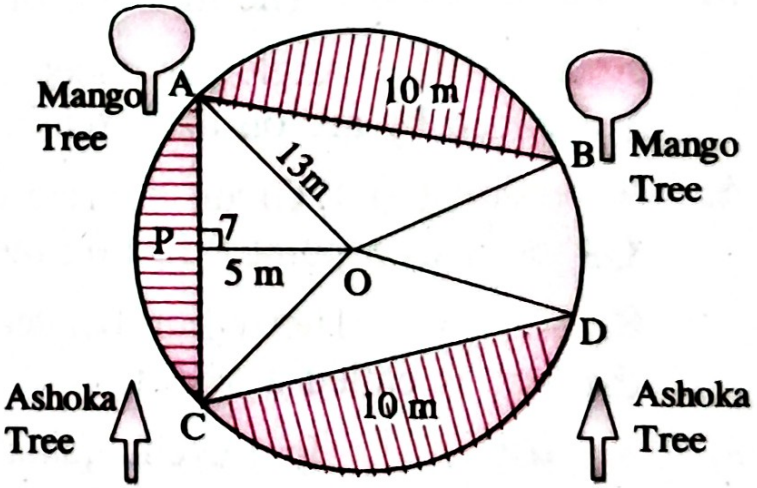
(*b*) What will you call the yellow colour shaded area AMB ?

OR

What is the measure of ∠ABC ?

(*c*) What will you call the grey colour area BCNA ?

3. **A farmer has a circular garden as shown in the fig. He has a different type of trees, plants and flower plants in his garden. In the garden, there are two mango trees A and B at a distance of AB = 10 m. Similarly, he has two Ashoka trees at the same distance of 10 m as shown at C and D. AB subtends ∠AOB = 120° at the center O. The perpendicular distance of AC from O = 5 m. The radius of the circle is 13 m.**



Read the above passage and answer the following questions :

(*a*) What is the value of ∠COD ?

(*b*) Find length AC *i.e.*, (distance between Mango tree and Ashoka tree)

OR

What is the value of ∠OAB ?

(*c*) What is ∠OCD ?

ASSERTION-REASON TYPE QUESTIONS

Direction : In each of the following questions, a statement of **Assertion (A)** is followed by a corresponding statement of **Reason (R)**. Mark the correct answer using (*a*), (*b*), (*c*) and (*d*).

(*a*) Both assertion and reason are true and reason is the correct explanation of assertion.

(*b*) Both assertion and reason are true but reason is not the correct explanation of assertion.

(*c*) Assertion is true but reason is false.

(*d*) Assertion is false but reason is true.

1. **Assertion (A) :** The length of a chord which is at a distance of 5 cm from the centre of a circle of radius 10 cm is 17·32 cm.

   Reason (R) : The perpendicular from the centre of a circle to a chord bisects the chord.

2. **Assertion (A) :** The circumference of a circle must be a positive real number.

   Reason (R) : If r (> 0) is the radius of the circle, then its circumference $2\pi r$ is a positive real number.

3. **Assertion (A) :** The measure of $\angle AOC = 60^\circ$.

   Reason (R) : Angle subtended by an arc of a circle at the centre of the circle is double the angle subtended by arc on the circumference.

4. **Assertion (A) :** Given a circle of radius r and with centre O. A point P lies a plane such that $OP > r$, then point P lies on the exterior of the circle.

   Reason (R) : The region between an arc and the two radii, joining the centre of the end points of the arc, is called a sector.

5. **Assertion (A) :** In a cyclic quadrilateral ABCD, $\angle A - \angle C = 60^\circ$, then the smaller of two is 60°.

   Reason (R) : Opposite angles of cyclic quadrilateral are supplementary.

6. **Assertion (A) :** If P and Q are any two points on a circle, then the line segment PQ is called a chord of the circle.

   Reason (R) : Equal chords of a circle subtend equal angles at the centre.

7. **Assertion (A) :** Two diameters of a circle intersect each other at right angles. Then the quadrilateral formed by joining their end-points is a square.

   Reason (R) : Equal chords subtend equal angles at the centre.

8. **Assertion (A) :** The sum of either pair of opposite angles of a cyclic quadrilateral is 180°.

   Reason (R) : Two or more circles are called concentric circles if and only if they have different centre and radii.

9. **Assertion (A) :** A diameter of a circle is the longest chord of the circle and all diameters have equal length.

   Reason (R) : Length of a diameter = radius.