



STANDARD 8TH: CHAPTER 17

Circle - Chord and Arc

Q1. Select all correct options

- In a circle, if two chords are congruent, then their corresponding arcs are congruent.
 - True
 - False
- In a circle, if two chords are perpendicular to each other, then they must intersect at the center of the circle.
 - True
 - False
- If the diameter of a circle is 10 cm, what is the approximate length of an arc subtended by a central angle of 45 degrees? (Take $\pi = 3.14$)
 - Less than 4
 - Less than 3
 - Less than 5, but greater than 4
 - None of the above
- What is the formula to calculate the area of a sector with angle θ of a circle?
 - $\frac{1}{2}r^2\theta$
 - $r\theta$
 - $\pi r\theta$
 - $\frac{1}{2}r\theta$
- What is the definition of a chord in a circle?
 - A line segment joining two points on the circumference of the circle
 - A line segment joining the center of the circle to a point on the circumference
 - A line segment joining two points on the same radius of the circle
 - A line segment joining the center of the circle to a point outside the circle
- What is the relationship between the length of an arc and the circumference of the circle?
 - The length of the arc is always greater than the circumference.
 - The length of the arc is always equal to the circumference.
 - The length of the arc is always less than the circumference.
 - There is no relationship between the two.

7. C is the center of the circle with a radius of 10 cm. Determine the distance of the chord from the center if its length is 12 cm.
- 10 cm
 - 8 cm
 - 6 cm
 - 11 cm
8. In a circle, if the length of an arc is 15 cm and the radius is 5 cm, what is the measure of the central angle subtended by the arc?
- 1 radian
 - 2 radians
 - 3 radians
 - 4 radians
9. In a circle, if the length of an arc is 40 cm and the radius is 5 cm, what is the measure of the central angle subtended by the arc?
- 4 radians
 - 6 radians
 - 8 radians
 - The angle subtended by the arc cannot exceed 2π radian
10. If the length of an arc in a circle is equal to the radius of the circle, what is the measure of the central angle subtended by the arc?
- 1 radian
 - 2 radians
 - 3 radians
 - 2π radian

Q2. Solve the followings:

- The circle with center O has a radius of 25 cm. Find the distance of a chord from the center if the length of the chord is 48 cm.
- Consider a circle with a radius of 6 cm. A chord is drawn such that its distance from the center of the circle is $3\sqrt{3}$ cm. What is the measure of the arc subtended by the chord?
- Consider a circle with a radius of 6 cm. A chord is drawn such that the length of the chord is $6\sqrt{3}$ cm, what is the measure of the arc subtended by the chord?
- Consider a circle with a radius of $4\sqrt{2}$ cm. A chord is drawn such that the measure of the arc subtended by the chord is 90 degrees, find the length of the chord?

5. Consider a circle with a radius of 4 cm. A chord is drawn such that the measure of the arc subtended by the chord is 120 degrees, find the length of the chord?
6. Consider a circle with a radius of 10 cm. A chord is drawn such that the measure of the arc subtended by the chord is 60 degrees, find the length of the chord?
7. Consider a circle with a chord such that the length of the chord is $10\sqrt{3}$ cm and its distance from the center is 5 cm. Find the measure of the arc subtended by the chord.
8. Consider a circle with radius 10 cm. Two chords are parallel to each other's with 4 cm and 3 cm away from the center of the circle. Find the sum of the lengths of chords.
9. Consider a circle with radius 10 cm. Two chords with lengths 8cm and 6cm respectively. Find the maximum length between the two chords.
10. Consider a circle with radius 10 cm. Two chords with lengths 8cm both respectively. Find the maximum length between the two chords.