

Chapter 10

1. In a circle with center O, a diameter AB is drawn. What is the measure of $\angle AOB$?

- a) 45 degrees
- b) 90 degrees
- c) 180 degrees
- d) 360 degrees

Answer: c) 180 degrees

2. In a circle with radius 7 cm, what is the length of a chord that is at a distance of 5 cm from the center?

- a) 10 cm
- b) 14 cm
- c) 24 cm
- d) 26 cm

Answer: b) 14 cm

3. In a circle, if two chords are congruent, then they are equidistant from the _____ of the circle.

- a) center
- b) circumference
- c) diameter
- d) tangent

Answer: a) center

4. In the given figure, if AD is the diameter of the circle and $\angle ABC = 45$ degrees, then what is the measure of $\angle ADC$?

[Figure: A circle with points A, B, C, and D, where AD is the diameter]

- a) 45 degrees
- b) 90 degrees
- c) 135 degrees
- d) 180 degrees

Answer: b) 90 degrees

5. In a circle, if a chord and a tangent intersect externally, then the measure of the angle between them is equal to _____.

- a) half the measure of the intercepted arc
- b) twice the measure of the intercepted arc
- c) one-fourth the measure of the intercepted arc
- d) three times the measure of the intercepted arc

Answer: a) half the measure of the intercepted arc

6. In the given figure, what is the measure of $\angle CAB$?

[Figure: A circle with points A, B, and C, where AC is a diameter and $\angle ABC$ is an inscribed angle]

- a) 45 degrees
- b) 60 degrees
- c) 90 degrees
- d) 180 degrees

Answer: c) 90 degrees

7. In a circle with center O, a chord AB is produced to a point P outside the circle. If $AP = 10$ cm and $PB = 6$ cm, then what is the length of OP?

- a) 10 cm
- b) 16 cm
- c) 20 cm
- d) 26 cm

Answer: b) 16 cm

8. The length of a tangent drawn from an external point to a circle is _____ to the radius drawn to the point of contact.

- a) equal
- b) half
- c) double
- d) triple

Answer: a) equal

9. In the given figure, what is the value of x?

[Figure: A circle with a tangent line and a secant line intersecting at a point outside the circle]

- a) 30 degrees
- b) 45 degrees
- c) 60 degrees
- d) 90 degrees

Answer: b) 45 degrees

10. In a circle, if two chords are congruent, then their corresponding _____ are congruent.

- a) radii
- b) diameters
- c) arcs
- d) angles

Answer: d) angles

11. In a circle with center O, if angle AOB is 120 degrees, then the measure of its intercepted arc AB is:

- a) 30 degrees
- b) 60 degrees
- c) 90 degrees
- d) 120 degrees

Answer: d) 120 degrees

12. In a circle with radius 10 cm, the length of a chord is 24 cm. What is the distance of the chord from the center of the circle?

- a) 5 cm
- b) 10 cm
- c) 12 cm
- d) 20 cm

Answer: c) 12 cm

13. In the given figure, if AB and CD are two parallel chords of a circle and the radius of the circle is 5 cm, what is the distance between the chords AB and CD?

[Figure: A circle with two parallel chords AB and CD]

- a) 5 cm
- b) 10 cm

c) 15 cm

d) 20 cm

Answer: a) 5 cm

14. In a circle, the angle formed by an arc at the center is three times the angle formed by the same arc at any point on the circumference. What is the measure of the angle formed by the arc at the center?

a) 30 degrees

b) 60 degrees

c) 90 degrees

d) 120 degrees

Answer: b) 60 degrees

15. In the given figure, if $\angle PQR = 70$ degrees, what is the measure of arc PR?

[Figure: A circle with points P, Q, and R, where $\angle PQR$ is an inscribed angle]

a) 70 degrees

b) 140 degrees

c) 210 degrees

d) 420 degrees

Answer: b) 140 degrees

16. In a circle with center O, if OP is a radius and $\angle POQ = 110$ degrees, then what is the measure of $\angle OPQ$?

a) 35 degrees

b) 45 degrees

c) 55 degrees

d) 70 degrees

Answer: c) 55 degrees

17. In the given figure, what is the value of y?

[Figure: A circle with a tangent line and a secant line intersecting at a point outside the circle]

a) 40 degrees

b) 50 degrees

c) 70 degrees

d) 90 degrees

Answer: b) 50 degrees

18. In a circle with center O, if $\angle AOC = 50$ degrees, what is the measure of its intercepted arc AC?

a) 50 degrees

b) 100 degrees

c) 150 degrees

d) 200 degrees

Answer: b) 100 degrees

19. In the given figure, if AB is the diameter of the circle and $\angle BDC = 60$ degrees, then what is the measure of $\angle CBA$?

[Figure: A circle with points A, B, C, and D, where AB is the diameter and $\angle BDC$ is an inscribed angle]

a) 30 degrees

b) 45 degrees

c) 60 degrees

d) 90 degrees

Answer: d) 90 degrees

20. In a circle, if two arcs are congruent, then their corresponding _____ are congruent.

a) angles

b) chords

c) sectors

d) radii

Answer: c) sectors

21. In a circle with radius 8 cm, what is the length of the arc subtended by a central angle of 60 degrees?

a) 4π cm

b) 8π cm

c) 12π cm

d) 16π cm

Answer: c) 12π cm

22. In the given figure, if AC and BD are chords of a circle such that $AC = BD$, then what can be said about the chords?

[Figure: A circle with chords AC and BD]

- a) They are parallel.
- b) They are perpendicular.
- c) They are equal in length.
- d) They bisect each other.

Answer: c) They are equal in length.

23. In a circle, the perpendicular from the center to a chord bisects the chord. True or False?

- a) True
- b) False

Answer: a) True
24. In the given figure, if AB and CD are two parallel chords of a circle and $AD = 6$ cm, what is the length of BC?

[Figure: A circle with two parallel chords AB and CD]

- a) 3 cm
- b) 6 cm
- c) 9 cm
- d) 12 cm

Answer: a) 3 cm

25. In a circle with center O, if $\angle APB = 80$ degrees and $\angle BQC = 60$ degrees, then what is the measure of $\angle AOQ$?

[Figure: A circle with points A, B, O, P, Q, and C]

- a) 80 degrees
- b) 100 degrees
- c) 120 degrees
- d) 140 degrees

Answer: d) 140 degrees

26. In the given figure, if AB is a diameter of the circle and $\angle ACB = 70$ degrees, then what is the measure of $\angle AOB$?

[Figure: A circle with points A, B, C, and O, where AB is the diameter and $\angle ACB$ is an inscribed angle]

- a) 35 degrees
- b) 70 degrees
- c) 140 degrees
- d) 180 degrees

Answer: d) 180 degrees

27. In a circle with radius 6 cm, what is the length of an arc subtended by an angle of 45 degrees at the center?

- a) 3π cm
- b) 4.5π cm
- c) 6π cm
- d) 9π cm

Answer: b) 4.5π cm

28. In the given figure, what is the value of x ?

[Figure: A circle with a tangent line and a secant line intersecting at a point outside the circle]

- a) 30 degrees
- b) 45 degrees
- c) 60 degrees
- d) 90 degrees

Answer: c) 60 degrees

29. In a circle, if a radius is perpendicular to a chord, then it bisects the chord. True or False?

- a) True
- b) False

Answer: a) True

30. In the given figure, if $\angle PRQ = 75$ degrees, what is the measure of $\angle PSR$?

[Figure: A circle with points P, Q, R, and S, where $\angle PRQ$ is an inscribed angle]

- a) 75 degrees
- b) 105 degrees
- c) 135 degrees
- d) 150 degrees

Answer: b) 105 degrees

31. In the given figure, if PQ is the diameter of the circle and $\angle PQR = 40$ degrees, then what is the measure of $\angle PRQ$?

[Figure: A circle with points P, Q, and R, where PQ is the diameter and $\angle PQR$ is an inscribed angle]

- a) 20 degrees
- b) 40 degrees
- c) 50 degrees
- d) 80 degrees

Answer: a) 20 degrees

32. In a circle, if two chords are equal in length, then their corresponding _____ are equal.

- a) arcs
- b) angles
- c) tangents
- d) diameters

Answer: b) angles

33. In the given figure, what is the value of x?

[Figure: A circle with a tangent line and a secant line intersecting at a point outside the circle]

- a) 20 degrees
- b) 35 degrees
- c) 50 degrees
- d) 70 degrees

Answer: c) 50 degrees

34. In a circle, if an arc is one-third of the circumference, then what is the measure of the central angle subtended by that arc?

- a) 60 degrees
- b) 90 degrees
- c) 120 degrees
- d) 180 degrees

Answer: d) 180 degrees

35. In the given figure, if AB and CD are two parallel chords of a circle and AD = 10 cm, what is the length of BC?

[Figure: A circle with two parallel chords AB and CD]

- a) 5 cm
- b) 10 cm
- c) 15 cm
- d) 20 cm

Answer: a) 5 cm

36. In a circle with center O, if $\angle BAC = 30$ degrees, then what is the measure of $\angle BOC$?

- a) 30 degrees
- b) 60 degrees
- c) 120 degrees
- d) 150 degrees

Answer: c) 120 degrees

37. In the given figure, what is the value of x?

[Figure: A circle with a tangent line and a secant line intersecting at a point outside the circle]

- a) 40 degrees
- b) 45 degrees
- c) 60 degrees
- d) 90 degrees

Answer: a) 40 degrees

38. In a circle with center O, if $\angle AOC = 120$ degrees, then what is the measure of its intercepted arc AC?

- a) 60 degrees
- b) 120 degrees
- c) 240 degrees
- d) 360 degrees

Answer: c) 240 degrees

39. In the given figure, if AB is a diameter of the circle and $\angle ACB = 45$ degrees, then what is the measure of $\angle AOB$?

[Figure: A circle with points A, B, C, and O, where AB is the diameter and $\angle ACB$ is an inscribed angle]

- a) 45 degrees
- b) 90 degrees
- c) 135 degrees
- d) 180 degrees

Answer: b) 90 degrees

40. In a circle, if a tangent and a secant intersect at a point outside the circle, then the measure of the angle formed is equal to _____.

- a) half the measure of the intercepted arc
- b) the measure of the central angle
- c) the measure of the inscribed angle
- d) the measure of the diameter

Answer: c) the measure of the inscribed angle

41. In a circle, if a radius is drawn to a point of tangency, it makes a _____ with the tangent line.

- a) right angle
- b) obtuse angle
- c) acute angle
- d) straight angle

Answer: a) right angle

42. In the given figure, what is the value of x?

[Figure: A circle with a tangent line and a secant line intersecting at a point outside the circle]

- a) 20 degrees
- b) 35 degrees
- c) 50 degrees
- d) 70 degrees

Answer: d) 70 degrees

43. In a circle, the sum of the measures of an inscribed angle and its intercepted arc is equal to _____.

- a) 90 degrees
- b) 180 degrees

- c) 270 degrees
- d) 360 degrees

Answer: b) 180 degrees

44. In the given figure, if PQ is the diameter of the circle and $\angle PSR = 60$ degrees, then what is the measure of $\angle PQR$?

[Figure: A circle with points P, Q, R, and S, where PQ is the diameter and $\angle PSR$ is an inscribed angle]

- a) 30 degrees
- b) 60 degrees
- c) 90 degrees
- d) 120 degrees

Answer: b) 60 degrees

45. In a circle with center O, if $\angle BOC = 150$ degrees, then what is the measure of its intercepted arc BC?

- a) 30 degrees
- b) 60 degrees
- c) 150 degrees
- d) 210 degrees

Answer: d) 210 degrees

46. In the given figure, what is the value of x?

[Figure: A circle with a tangent line and a secant line intersecting at a point outside the circle]

- a) 30 degrees
- b) 45 degrees
- c) 60 degrees
- d) 90 degrees

Answer: c) 60 degrees

47. In a circle, if an inscribed angle and a central angle intercept the same arc, then the measure of the inscribed angle is _____ the measure of the central angle.

- a) half
- b) double
- c) triple

d) equal to

Answer: a) half

48. In the given figure, if AB and CD are two parallel chords of a circle and the radius of the circle is 8 cm, what is the distance between the chords AB and CD?

[Figure: A circle with two parallel chords AB and CD]

a) 4 cm

b) 6 cm

c) 8 cm

d) 16 cm

Answer: c) 8 cm

49. In a circle, if two arcs are supplementary, then their corresponding _____ are congruent.

a) chords

b) angles

c) sectors

d) radii

Answer: b) angles

50. In the given figure, if $\angle POR = 120$ degrees, what is the measure of $\angle POQ$?

[Figure: A circle with points P, O, and Q, where $\angle POR$ is an inscribed angle]

a) 30 degrees

b) 60 degrees

c) 90 degrees

d) 120 degrees

Answer: b) 60 degrees