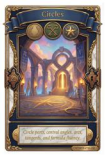
Circles

Circle parts, central angles, arcs, tangents, and formula fluency.

Name _____ Date _____

32 main | 2-up grid | 3 pages

Completion Reward



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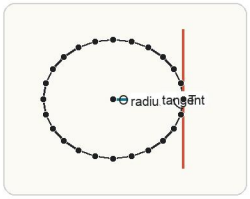
1. How does a tangent line meet the radius drawn to the point of tangency?



A tangent touches the circle at one point, and the radius to that point is perpendicular to the tangent.

A. Perpendicularly
B. Parallel
C. With equal slope
D. It never meets it

2. What is true about all radii in the same circle?

A. They are perpendicular.
B. They are tangents.
C. They are congruent.
D. They all measure 1.

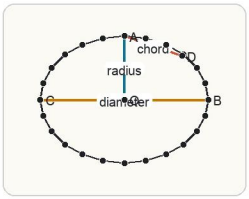
3. What is a secant of a circle?

A. A line that touches the circle at one point
B. A line that intersects the circle at two points
C. A segment from the center to the circle
D. A chord through the center only

4. What do concentric circles share?

A. The same center
B. The same radius
C. The same tangent line
D. The same circumference

5. What is the difference between an arc and a chord?



An arc is a curved part of the circle itself, while a chord is a straight segment connecting two points on the circle.

A. An arc goes through the center; a chord never does.
B. A chord is curved and an arc is straight.
C. An arc is curved; a chord is a straight segment with endpoints on the circle.
D. They mean exactly the same thing.

6. Which term names a segment with endpoints on the circle?

A. Chord
B. Radius
C. Tangent
D. Central angle

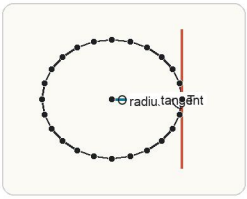
7. Which segment in a circle is a radius?

A. A segment with endpoints on the circle through the center
B. A segment from the center to a point on the circle
C. A line touching the circle once
D. A line crossing the circle twice

8. Which description matches a tangent line?

A. It passes through the center.
B. It has both endpoints on the circle.
C. It touches the circle at exactly one point.
D. It cuts the circle twice.

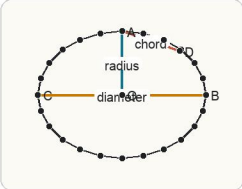
9. Which labeled segment is a radius in the figure?



A radius runs from the center of the circle to a point on the circle.

A. OT
B. CT
C. AB
D. The tangent segment through T

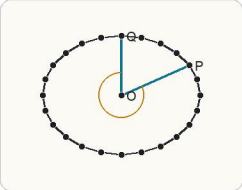
10. Which segment in the figure is a diameter?



A diameter is a chord that passes through the center, so it spans the circle in a straight line through the middle.

A. OT
B. Top chord
C. CB
D. The tangent

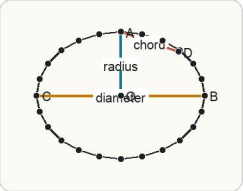
11. If the central angle shown measures 70 degrees, what is the measure of its intercepted arc?



A central angle and its intercepted arc have the same measure because both are determined from the center of the circle.

A. 35 degrees
B. 70 degrees
C. 140 degrees
D. 110 degrees

12. Which segment in the figure is a chord but not a diameter?



A chord connects two points on the circle, but it is only a diameter when it goes through the center.

A. CB
B. Top chord
C. OT
D. The tangent

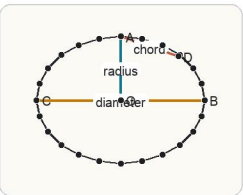
13. A radius is drawn to the point where a tangent touches the circle. What can you conclude?

A. The radius is parallel to the tangent.
B. The tangent is a diameter.
C. The radius bisects every chord.
D. The radius is perpendicular to the tangent.

14. A chord passes through the center of a circle. What can you conclude?

A. The chord is a diameter.
B. The chord is a tangent.
C. The chord is perpendicular to every radius.
D. The chord has length equal to the radius.

15. A student says a circle with radius 5 has diameter 5. What is the mistake?



The diameter is twice the radius, so a radius of 5 gives a diameter of 10, not 5.

A. Diameter is half the radius, so it should be 2.5.
B. Diameter is twice the radius, so it should be 10.
C. The diameter should be 25.
D. Radius and diameter are always equal.

16. A student says any chord is a diameter. What is the mistake?

A. A diameter touches the circle only once.
B. A diameter must pass through the center.
C. A chord must be outside the circle.
D. A diameter is always shorter than a radius.

17. A student says doubling the radius doubles the area. What is the mistake?

A. Area depends only on the diameter.
B. Area uses 2pi r.
C. Area depends on the square of the radius.
D. The radius should be subtracted, not doubled.

18. A circle has diameter 14. What is its radius? Answer with a number.

19. A circle has radius 9. What is its diameter? Answer with a number.

20. A circle has radius 7. What is its diameter? Answer with a number.

21. A central angle measures 110 degrees. What is the measure of its intercepted minor arc? Answer with a number.

22. A circle has diameter 10. What is its radius? Answer with a number.

23. A circle has radius 4. What is its circumference?

A. 16pi
B. 8pi
C. 4pi
D. 32pi

24. A circle has radius 3. What is its area?

A. 6pi
B. 3pi
C. 18pi
D. 9pi

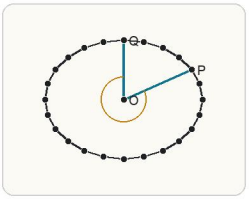
25. **A circle has diameter 12. What is its circumference?**

A. 24pi
B. 12pi
C. 6pi
D. 144pi

26. **Student A says the area of a circle is pi r^2. Student B says it is 2pi r. Who is correct?**

A. Student B
B. Both students
C. Neither student
D. Student A

27. **If you need the measure of a minor arc, what is the most useful angle to find first?**



Minor arc measure is most directly read from the central angle that intercepts the same arc.

A. Any exterior angle
B. Its central angle
C. A tangent angle far away
D. The slope of a chord

28. **A student uses C = 2pi r to find the space inside a circle. What is wrong?**

A. C = 2pi r only works for semicircles.
B. C = 2pi r finds circumference, not area; area uses A = pi r^2.
C. Area and circumference are always equal.
D. The formula should be C = pi r^2 instead.

29. **A circle has circumference 24pi. What is its radius? Answer with a number.**

30. **A circle has area 49pi. What is its radius? Answer with a number.**

31. **A bicycle wheel has radius 13 inches. What is the diameter? Answer with a number.**

32. **Which explanation is best for finding circumference from radius?**

A. Circumference measures the distance around the circle, so use C = 2pi r.
B. Circumference measures the space inside the circle, so use A = pi r^2.
C. Circumference is twice the diameter plus pi.
D. Circumference comes from averaging the radius and diameter.