Secondary 2H **Name**_____ **Desk** _____

Unit 10 **HW: REVIEW of Circles**

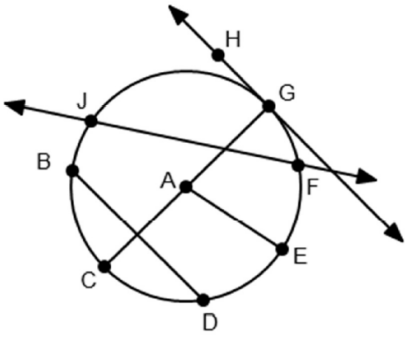
Score _____

TEST will be on: _____

Things you should be able to do:

- Explain why all circles are similar.
- Understand and apply the relationships between inscribed angles, central angles, arcs, chords, tangent lines and secant lines.
- Use and apply the properties of a quadrilateral inscribed in a circle.
- Identify a tangent line to a circle.
- Find arc lengths and areas of sectors of circles.
- Find the equation of a circle given the center and the radius.
- Complete the square to find the center of a given circle.
- Determine the focus and directrix of a parabola given the equation.
- Write the equation of a parabola with a given focus/directrix and vertex.
- Write the equation of a parabola using the distance formula.

1. Identify the parts of Circle A.



a. chord:

b. tangent line:

c. diameter:

d. radius:

e. point of tangency:

f. center:

g. secant line:

2. Identify the term that best describes the given line, segment, or point.

a. $\overline{AF}$

b. $\overline{PF}$

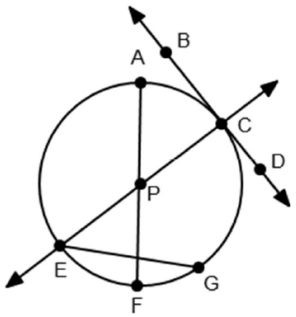
c. C

d. $\overleftrightarrow{BD}$

e. $\overline{EG}$

f. $\overleftrightarrow{CE}$

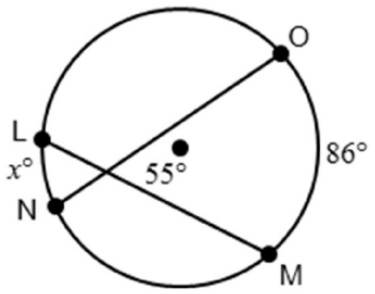
g. *P*



3. A child's train has a circular turning radius of 12 inches. The distance between the two front tires is 3 inches. To the nearest tenth of an inch, how much farther does the tire on the outer edge of the turn travel than a tire on the inner edge?

For #4-6, find the value of x.

4.



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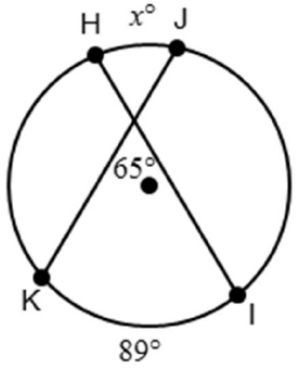

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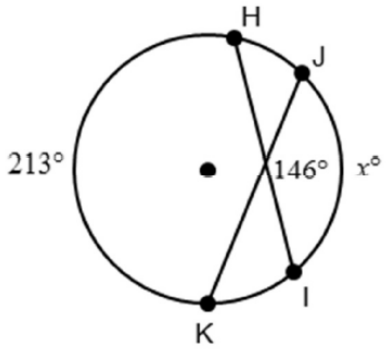


7. In circle Q, $m\angle CBD = 23$ and $m\widehat{AD} = 98$. Find the following measures:

a. $m\widehat{CD}$

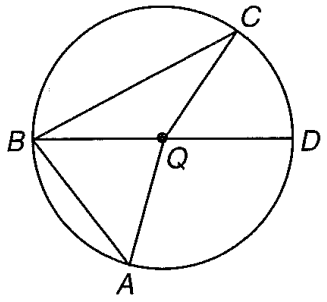
b. $m\angle DBA$

c. $m\widehat{AC}$

d. $m\angle CBA$

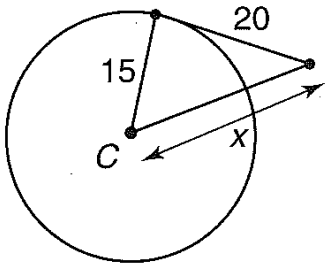
e. $m\widehat{CBA}$

f. $m\angle DQA$



For #8 and #9, assume that segments are tangent if they appear to be tangent. Find the value of x.

8.



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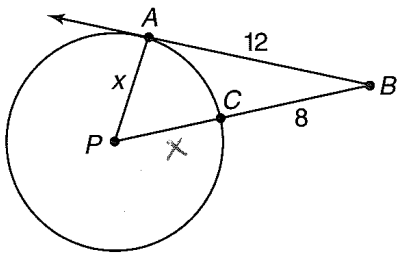
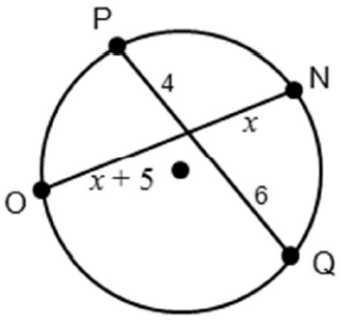


For #10-18, find the value of x. Assume that segments are tangent if they appear to be tangent.

10.



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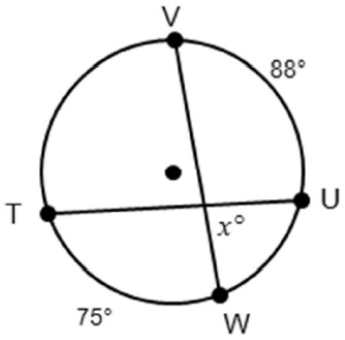

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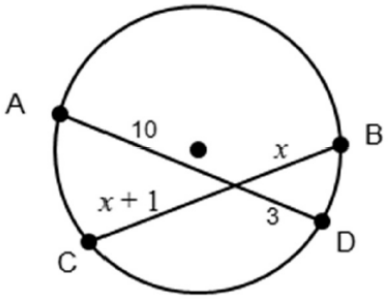

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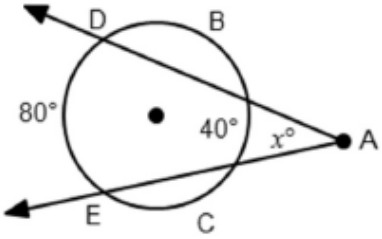

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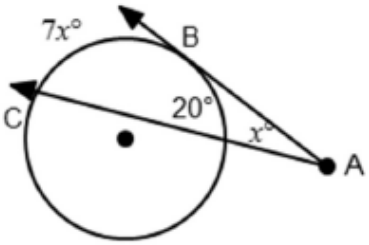

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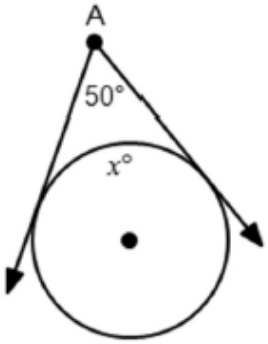

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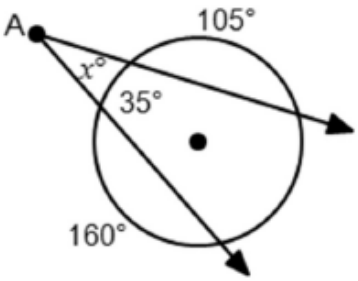

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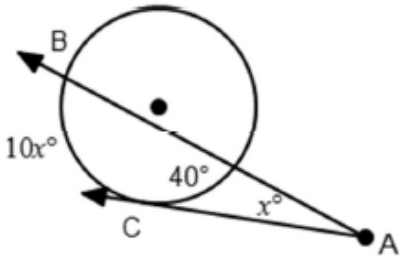

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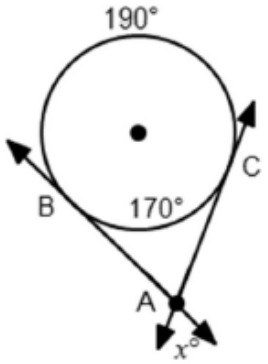
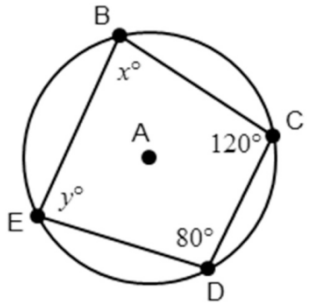
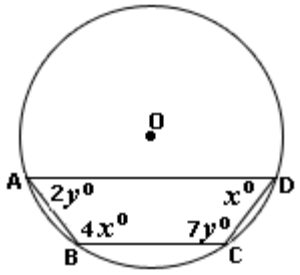


19. Find the value of x and y.



20. Find the value of x and y.



21. Find the degree measure of each angle expressed in radians and find the radian measure of each angle expressed in degrees. (Express radian measures in terms of π).

a. $225°$ b. $\frac{7\pi}{6}$ c. $58°$

d. $\frac{\pi}{2}$ e. $270°$ f. $\frac{2\pi}{3}$

22. Find the arc length if the radius of a circle is 10 yards and the central angle is 2.9 radians. Write the answer in terms of π and give a decimal approximation to the nearest thousandth.

23. Find the arc length if the diameter of a circle is 12 miles the central angle is 125°. Write the answer in terms of π and give a decimal approximation to the nearest thousandth.

24. A central angle of $\frac{5\pi}{2}$ radians intercepts an arc length of 46 feet. What is the radius of the circle, rounded to the nearest hundredth?

25. Find the area of a sector with a central angle of 9.6 radians and a radius of 21.4 meters.

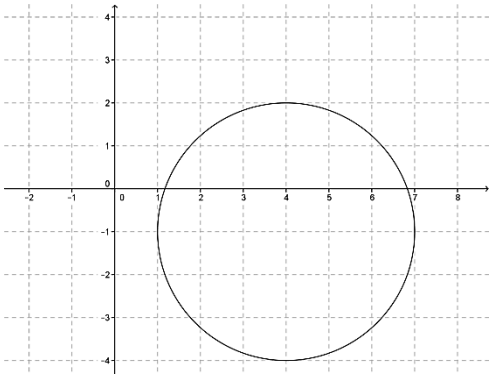
26. Find the area of a sector with a central angle of 44° and a radius of 56 inches.

27. A personal pizza with a 6-inch diameter is cut into slices with a central angle of $\frac{\pi}{2}$ radians. What is the area of each slice? What is the perimeter of each slice?

28. Write the equation of a circle with a center at $(-1, 7)$ and a radius of 5.

29. Identify the center and the radius of the circle: $(x + 5)^2 + (y - 3)^2 = 4$

30. Write the equation of the circle pictured.



31. Find the center and radius of the circle described by the equation: $x^2 + y^2 - 8x + 2y + 2 = 0$

32. What are the center and radius of the circle whose equation is $2x^2 + 2y^2 + 3x - 16y + \frac{9}{8} = 0$?