

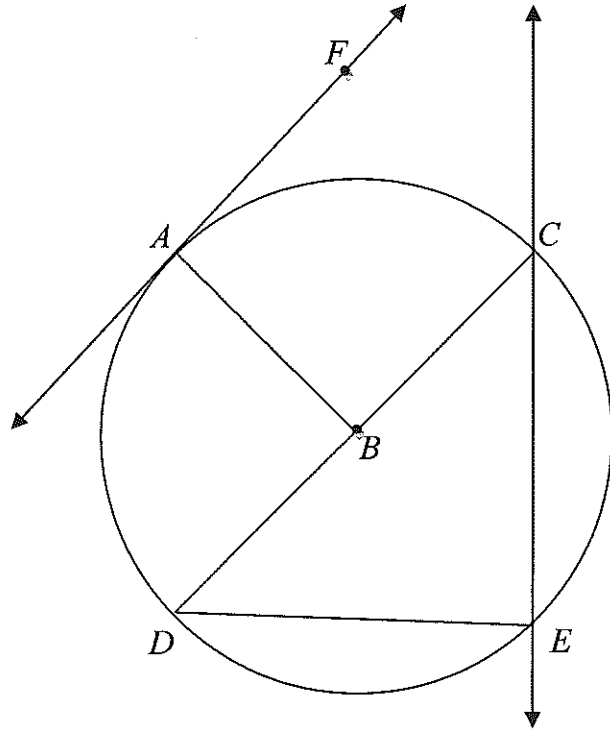
1st Test based on this review - 5/7/14

Honors Geometry Unit 8 Review #1

Name: Key
Date: _____

1-10. Match the geometric figure with the corresponding description for the figure below

- | | | | |
|----|-----|-----------------|----------------------|
| l) | 1. | \overline{AB} | a) Minor Arc |
| d) | 2. | \overline{DE} | b) Semicircle |
| a) | 3. | \widehat{CE} | c) Diameter |
| c) | 4. | \overline{DC} | d) Chord |
| f) | 5. | B | e) Tangent |
| g) | 6. | A | f) Center |
| b) | 7. | \widehat{DAC} | g) Point of tangency |
| h) | 8. | \widehat{ACD} | h) Major Arc |
| e) | 9. | \overline{AF} | i) Radius |
| j) | 10. | \overline{CE} | j) secant |



11-14 True or False

11. A secant contains a chord

T

12. All chords are diameters

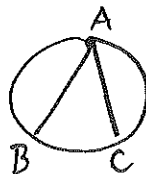
F

13. A diameter is $\frac{1}{2}$ the radius

F

14. An inscribed angle has a vertex on the circle

T

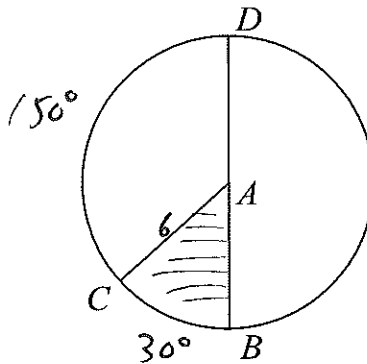


$\angle BAC$ inscribed

$$d=12 \Rightarrow r=6$$

15. In circle A , \overline{DB} is a diameter with length 12, and $m\angle DAC = 150^\circ$. Find the area of the shaded sector.

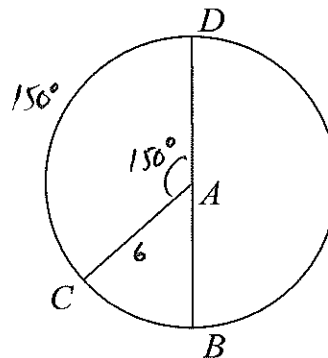
$$\begin{aligned} A_{\text{sector}} &= \frac{m\widehat{BC}}{360} \cdot \pi r^2 \\ &= \frac{30}{360} \cdot \pi (6)^2 \\ &= \boxed{3\pi \text{ units}^2} \end{aligned}$$



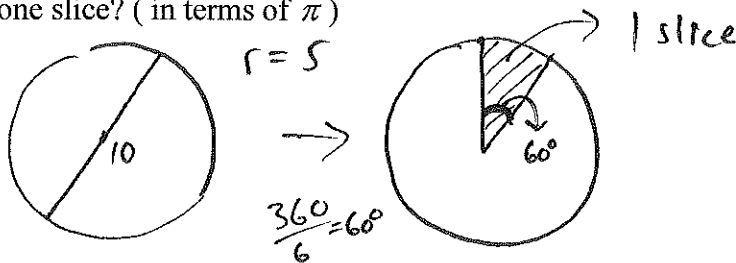
16. In circle A , \overline{DB} is a diameter with length 12, and $m\angle DAC = 150^\circ$. Find the length of arc DC.

$$d=12 \Rightarrow r=6$$

$$\begin{aligned} \text{Arc length} &= \frac{m\widehat{DC}}{360} \cdot 2\pi r \\ &= \frac{150}{360} \cdot 2\pi (6) \\ &= \boxed{5\pi \text{ units}} \end{aligned}$$



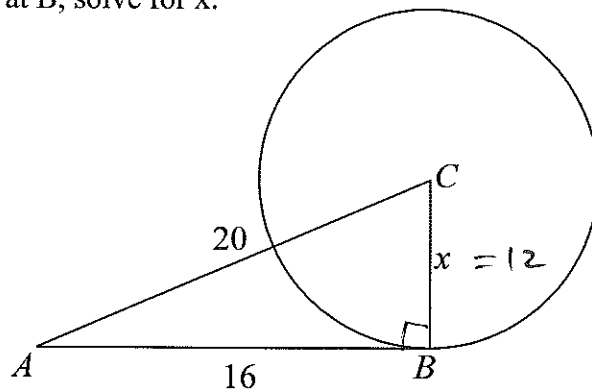
17. A round pie with a 10" diameter is cut into 6 congruent slices. What is the area of one slice? (in terms of π)



$$\begin{aligned} A_{\text{sector}} &= \frac{60^\circ}{360^\circ} \cdot \pi (5)^2 \\ &= \boxed{\frac{25}{6}\pi \text{ inches}^2} \end{aligned}$$

18. Given \overline{AB} is tangent to circle C at B , solve for x .

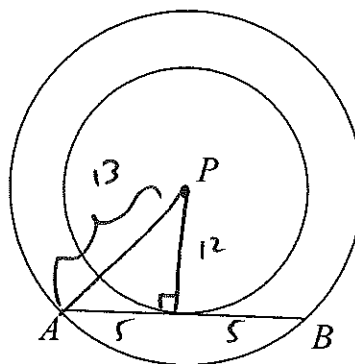
$$\begin{aligned} a^2 + b^2 &= c^2 \\ 16^2 + x^2 &= 20^2 \\ 256 + x^2 &= 400 \\ -256 &\quad -256 \\ \hline \sqrt{x^2} &= \sqrt{144} \\ x &= 12 \end{aligned}$$



OR TRIPLES

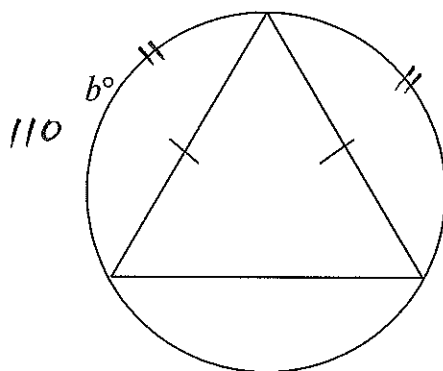
19. Given two concentric circles with radii 12 and 13, find the length of the chord of the larger circle that is tangent to the smaller circle.

$\boxed{10}$



$(5, 12, 13)$

20. Solve for b.

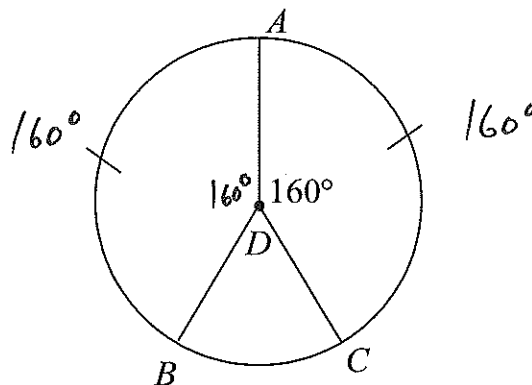


$$360 - 140 = 220$$

$$\frac{220}{2} = \boxed{110^\circ}$$

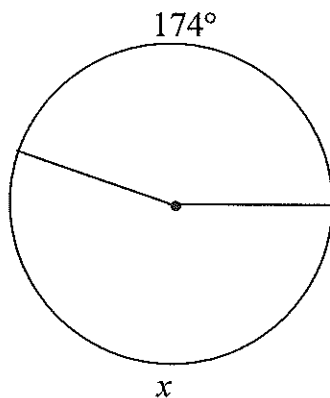
21. Find the $m\angle ADB$.

$\boxed{m\angle ADB = 160}$



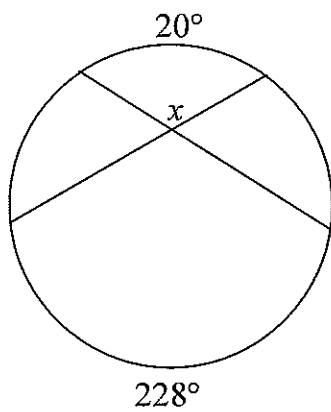
22. Solve for x.

$$360 - 174 = \boxed{186^\circ}$$



23. Solve for x.

INSIDE ⊙

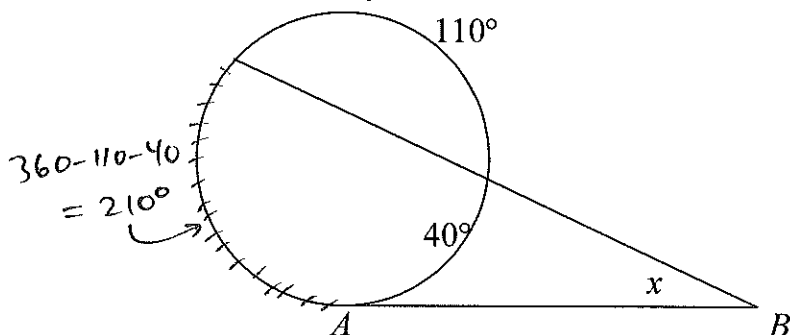


$$\begin{aligned}
 x &= \frac{1}{2}(228 + 20) \\
 &= \frac{1}{2}(248) \\
 &= 124^\circ
 \end{aligned}$$

$$x = 124^\circ$$

24. \overline{AB} is tangent to the circle at A. Solve for x.

OUTSIDE ⊙

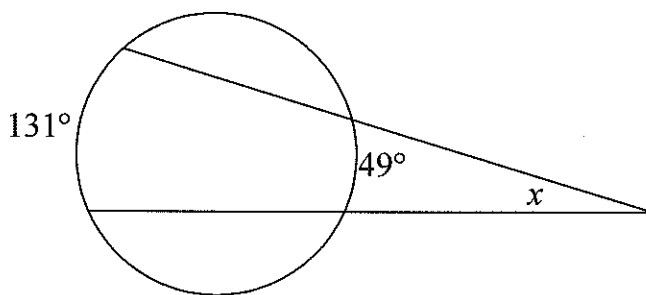


$$\begin{aligned}
 x &= \frac{1}{2}(210 - 40) \\
 &= \frac{1}{2}(170) \\
 &= 85^\circ
 \end{aligned}$$

$$x = 85^\circ$$

25. Solve for x.

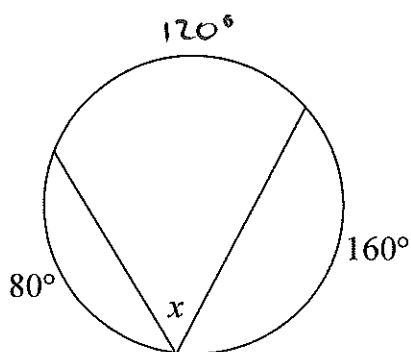
OUTSIDE ⊙



$$\begin{aligned}
 x &= \frac{1}{2}(131 - 49) \\
 &= \frac{1}{2}(82) \\
 &= 41^\circ
 \end{aligned}$$

$$x = 41^\circ$$

26. Solve for x.



$$360 - 160 - 80 = 120$$

$$x = \frac{1}{2}(120) = 60^\circ$$

$$x = 60^\circ$$

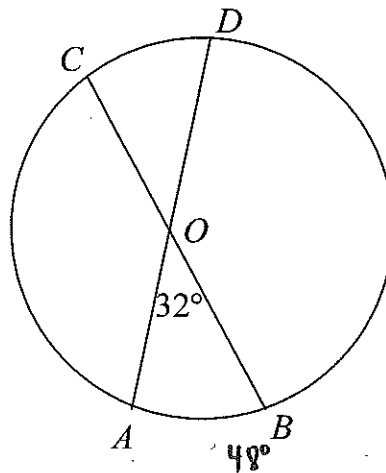
27. Find the measure of arc CD.

$$\angle AOB = \frac{1}{2}(\widehat{CD} + \widehat{AB})$$

$$32 = \frac{1}{2}(\widehat{CD} + 48)$$

$$\begin{array}{r} 64 = \widehat{CD} + 48 \\ -48 \quad -48 \\ \hline \end{array}$$

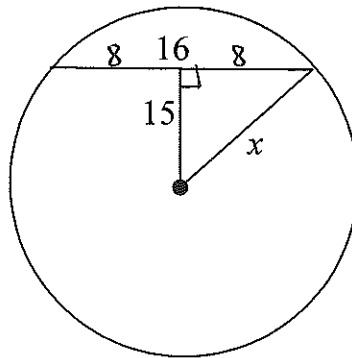
$$\boxed{16 = \widehat{CD}}$$



$$\boxed{\widehat{CD} = 16^\circ}$$

28. Solve for x. (Round to the nearest tenth if necessary)

$$\boxed{x = 17}$$



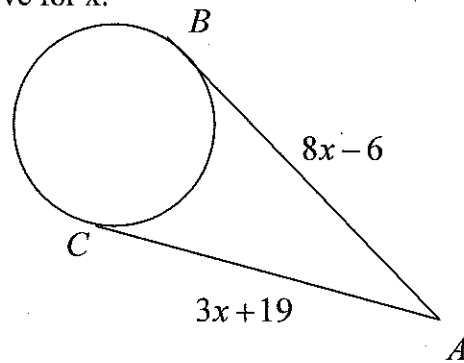
$$(8, 15, 17)$$

29. \overline{AB} and \overline{AC} are tangent to the circle. Solve for x.

$$\begin{array}{r} 8x - 6 = 3x + 19 \\ -3x \quad -3x \\ \hline \end{array}$$

$$\begin{array}{r} 5x - 6 = 19 \\ +6 \quad +6 \\ \hline \end{array}$$

$$\frac{5x}{5} = \frac{25}{5} \quad \boxed{x = 5}$$

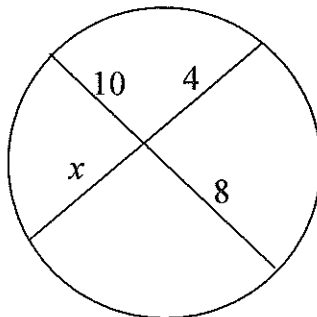


30. Solve for x.

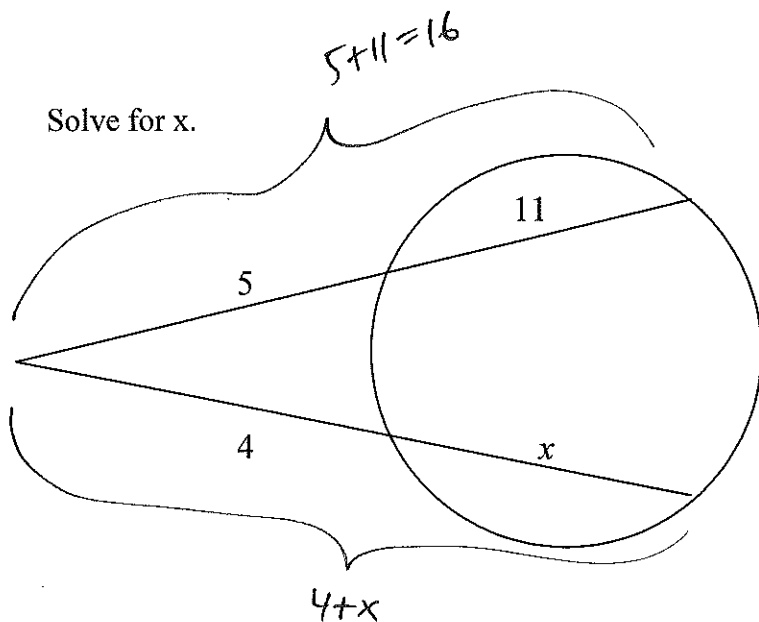
$$10 \cdot 8 = 4 \cdot x$$

$$\frac{80}{4} = \frac{4x}{4}$$

$$\boxed{20 = x}$$



31. Solve for x.



$$5(16) = 4(4+x)$$

$$80 = 16 + 4x$$

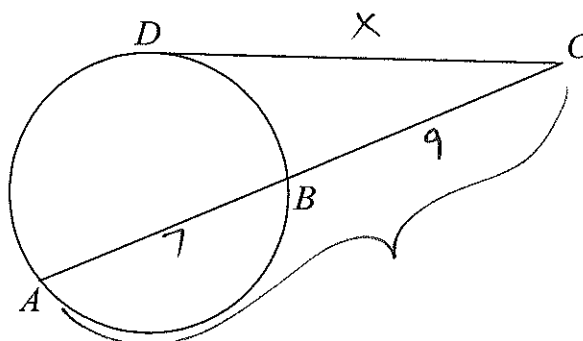
$$\begin{array}{r} -16 \\ -16 \\ \hline 64 = 4x \\ \frac{64}{4} = \frac{4x}{4} \\ \boxed{16 = x} \end{array}$$

32. \overline{CD} is tangent to the circle, $AB = 7$ and $BC = 9$, Find CD . Round to the nearest tenth if necessary.

$$x^2 = 9(16)$$

$$\sqrt{x^2} = \sqrt{144}$$

$$\boxed{x = 12}$$



33. What is the standard equation of a circle with a center of $(4, -6)$ and a radius of 3?

$$(x-h)^2 + (y-k)^2 = r^2$$

$$\boxed{(x-4)^2 + (y+6)^2 = 9}$$

34. What is the standard equation of a circle with center $(-8, 3)$ and a radius of 6?

$$\boxed{(x+8)^2 + (y-3)^2 = 36}$$

35. What is the standard equation of a circle with center $(1, -4)$ and a radius of 7?

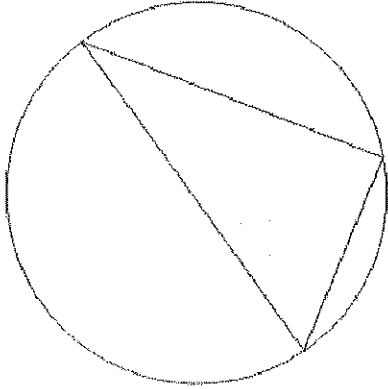
$$\boxed{(x-1)^2 + (y+4)^2 = 49}$$

36. What is the standard equation of a circle with center $(0, 2)$ and a radius?

$$(x-0)^2 + (y-2)^2 = 81$$

$$\boxed{x^2 + (y-2)^2 = 81}$$

37. Write the steps in order to create the circumscribed circle.



Step 1. Construct the \perp bisector of one side of Δ

Construct the \perp bisector of another side of Δ

Step 2. Where the bisectors intersect, that's the center of the circumscribed \odot .

Step 3. Place compass on the center point, adjust its width to reach any corner of Δ , and draw your circumscribed \odot .