

Topic 12 Review (Master)

Thursday, April 22, 2021 7:20 AM

Review for Chapter 12 Test

1) What is the $m\widehat{DAE}$? 330

2) What is the length of $\widehat{DE}$?

$$\frac{30}{360} 2\pi(24) = 12.57 \text{ cm}$$

3) What is the length of $\widehat{DAE}$?

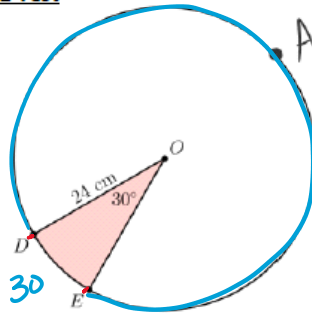
$$\frac{330}{360} 2\pi(24) = 138.23 \text{ cm}$$

4) What is the area of the orange sector?

$$\frac{30}{360} \pi(24)^2 = 150.80 \text{ cm}^2$$

5) What is the area of the white sector?

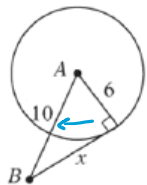
$$\frac{330}{360} \pi(24)^2 = 1658.76 \text{ cm}^2$$



$$\text{length} : \frac{n}{360} 2\pi r$$

$$\text{Area} : \frac{n}{360} \pi r^2$$

6) Solve for x.



$$x^2 + 6^2 = 10^2$$

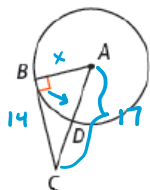
$$x^2 + 36 = 100$$

$$-36 \quad -36$$

$$\sqrt{x^2} = \sqrt{64}$$

$$x = 8$$

7) In the figure below, if $AC=17$ and $BC=14$, what is the radius?



$$x^2 + 14^2 = 17^2$$

$$x^2 + 196 = 289$$

$$-196 \quad -196$$

$$\sqrt{x^2} = \sqrt{93}$$

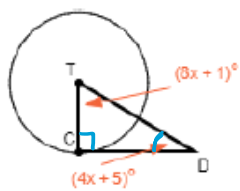
$$x = \sqrt{93}$$

$$x = 9.64$$

$$a^2 + b^2 = c^2$$

c = hypotenuse

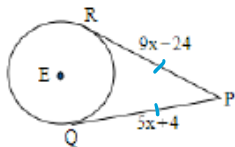
8) The segment $\overline{CD}$ is tangent to circle T. Find $m\angle TDC$.



$$\begin{aligned} 8x+1 + 90 + 4x+5 &= 180 \\ 12x + 96 &= 180 \\ -96 & \\ \hline 12x &= 84 \\ \frac{12x}{12} &= \frac{84}{12} \\ x &= 7 \end{aligned}$$

$$\begin{aligned} \angle TDC &= 4x+5 \\ &= 4(7)+5 \\ &= 33 \end{aligned}$$

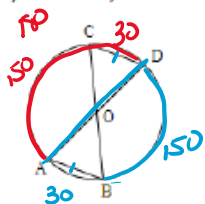
9) If $\overline{PQ}$ and $\overline{PR}$ are tangent to circle E in the given figure, find the value of x and find $\overline{PR}$.



$$\begin{aligned} 9x-24 &= 5x+4 \\ -5x & \quad -5x \\ \hline 4x &= 28 \\ \frac{4x}{4} &= \frac{28}{4} \\ x &= 7 \end{aligned}$$

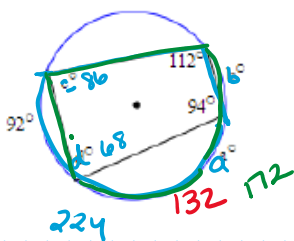
$$\begin{aligned} \overline{PR} &= 9x-24 \\ &= 9(7)-24 \\ &= 63-24 \\ \overline{PR} &= 39 \end{aligned}$$

10) In circle O, $m\widehat{BD}=150$ and $\overline{AB} \cong \overline{CD}$. What is the $m\widehat{CA}$?



$$m\widehat{CA} = 150$$

11) Find the value of a, b, c, and d.

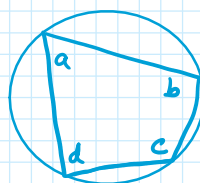


$$\begin{aligned} C + 94 &= 180 \\ -94 & \quad -94 \\ \hline C &= 86 \end{aligned}$$

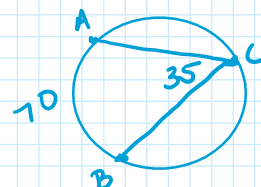
$$\begin{aligned} d + 112 &= 180 \\ -112 & \quad -112 \\ \hline d &= 68 \end{aligned}$$

$$\begin{aligned} 224 - 92 &= a \\ a &= 132 \end{aligned}$$

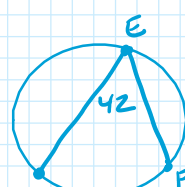
$$\begin{aligned} 172 - 132 &= b \\ b &= 40 \end{aligned}$$



$$\begin{aligned} a + c &= 180 \\ b + d &= 180 \end{aligned}$$

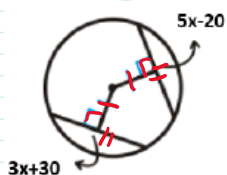


$$\begin{aligned} \angle ACB &= \frac{1}{2} m\widehat{AB} \\ \angle ACB &= \frac{1}{2} (70) \\ &= 35 \end{aligned}$$



$$\begin{aligned} \widehat{DF} &= 2(\angle DEF) \\ \widehat{DF} &= 2(42) \\ \widehat{DF} &= 84 \end{aligned}$$

12) Solve for x.

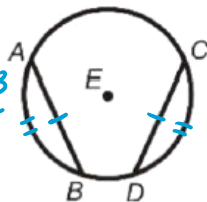


$$\begin{aligned} 5x-20 &= 3x+30 \\ -3x & \quad -3x \\ \hline 2x &= 50 \\ \frac{2x}{2} &= \frac{50}{2} \\ x &= 25 \end{aligned}$$

13) In the circle below the center is E and $\overline{AB} \cong \overline{CD}$.

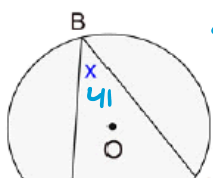
If $\widehat{AB} = 15x - 2$ and $\widehat{CD} = 10x + 23$, what is the value of x?

$$\begin{aligned} \widehat{AB} &= \widehat{CD} \\ 15x-2 &= 10x+23 \\ -10x & \quad -10x \\ \hline 5x &= 25 \\ \frac{5x}{5} &= \frac{25}{5} \\ x &= 5 \end{aligned}$$



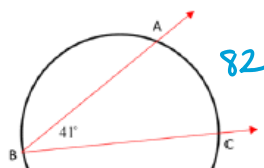
$$\begin{aligned} \widehat{AB} &= 15x-2 \\ 15(5)-2 & \\ 75-2 & \\ 73 & \end{aligned}$$

14) Solve for the inscribed angle.

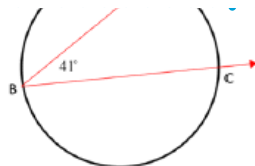
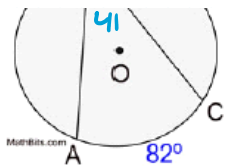


$$\angle ABC = \frac{1}{2} \widehat{AC}$$

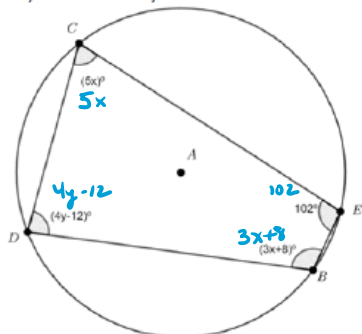
15) Find the intercepted arc.



$$\widehat{AC} = 2(\angle ABC)$$



16) Solve for x and y.



$$\begin{aligned} 5x + 3x + 8 &= 180 \\ 8x + 8 &= 180 \\ -8 &-8 \\ \frac{8x}{8} &= \frac{172}{8} \\ x &= 21.5 \end{aligned}$$

$$\begin{aligned} 4y - 12 + 102 &= 180 \\ 4y + 90 &= 180 \\ -90 &-90 \\ \frac{4y}{4} &= \frac{90}{4} \\ y &= 22.5 \end{aligned}$$