

**UNIT 4 TEST REVIEW**

Use  $\odot P$  to find the value of  $x$ . Then, find the arc measures.

$x = 22$

1.  $m\widehat{BC} = 88^\circ$

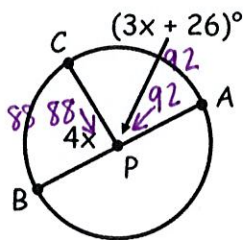
$m\widehat{AC} = 92^\circ$

$4x + 3x + 26 = 180$

$7x + 26 = 180$

$7x = 154$

$x = 22$



$x = 35$

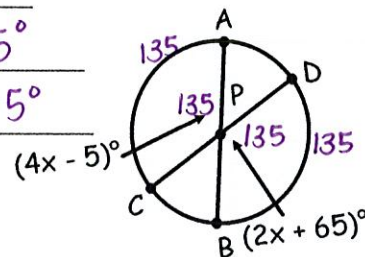
2.  $m\widehat{BD} = 135^\circ$

$m\widehat{AC} = 135^\circ$

$4x - 5 = 2x + 65$

$2x = 70$

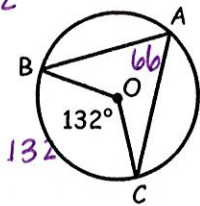
$x = 35$



Find the measure of the indicated arc or angle in  $\odot O$ .

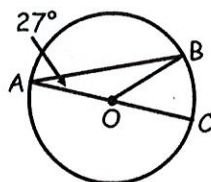
3.  $m\angle BAC = 66^\circ$

$m\angle BAC = 132 / 2 = 66$



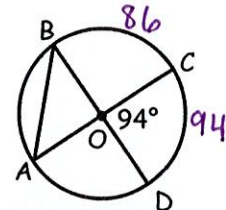
4.  $m\widehat{BC} = 54^\circ$

$m\widehat{BC} = 27 \cdot 2 = 54$



5.  $m\angle BAC = 43^\circ$

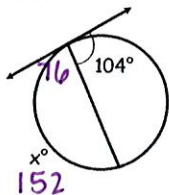
$180 - 94 = 86$   
 $m\angle BAC = 86 / 2 = 43$



Find the value of each variable.

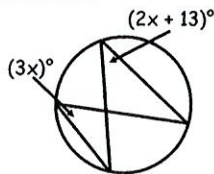
6.  $x = 152^\circ$

$180 - 104 = 76$   
 $x = 76 \cdot 2 = 152$



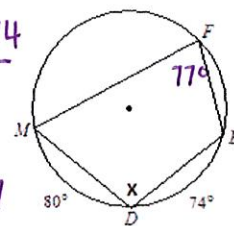
7.  $x = 13$

$3x = 2x + 13$   
 $x = 13$



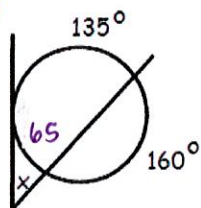
8.  $x = 103^\circ$

$\angle f = \frac{80 + 74}{2} = 77$   
 $x = 180 - 77 = 103$



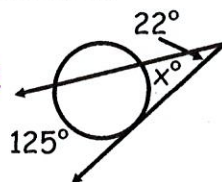
9.  $x = 35^\circ$

$360 - 135 - 160 = 65$   
 $x = \frac{135 - 65}{2} = 35$



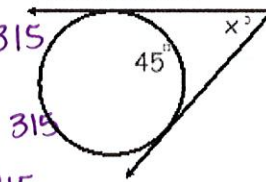
10.  $x = 81^\circ$

$\frac{125 - x}{2} = 22 \cdot 2$   
 $125 - x = 44$   
 $-x = -81$   
 $x = 81$



11.  $x = 135^\circ$

$360 - 45 = 315$   
 $x = \frac{315 - 45}{2} = 135$



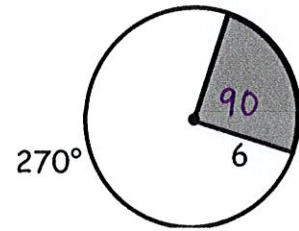
$$AOS = \frac{\pi r^2 \theta}{360} \quad AL = \frac{2\pi r \theta}{360}$$

Find the **area** and **arc length** of the shaded region.

$$12. A.S. = \frac{9\pi \text{ units}^2}{\text{or}} \\ AOS = \frac{\pi(6^2)(90)}{360} \quad 28.26 \text{ units}^2 \\ = 9\pi \\ = 28.26$$

$$13. A.L. = \frac{3\pi \text{ units}}{\text{or}} \\ AL = \frac{2\pi(6)(90)}{360} \quad 9.42 \text{ units} \\ = 3\pi \\ = 9.42$$

$$360 - 270 = 90$$



The radius of a pizza is 8 in. The pizza is cut into eighths.  $360/8 = 45^\circ$

$$14. \text{Find the area of one piece of pizza.} \\ \frac{8\pi \text{ in}^2 \text{ or } 25.15 \text{ in}^2} \\ AOS = \frac{\pi(8^2)(45)}{360} \\ = 8\pi \\ = 25.15$$

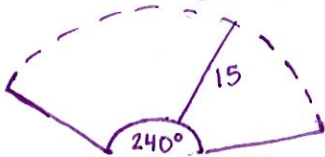
$$15. \text{Find the length of the crust on one} \\ \text{piece of pizza. } \frac{2\pi \text{ in or } 6.28 \text{ in}} \\ AL = \frac{2\pi(8)(45)}{360} \\ = 2\pi \\ = 6.28$$

16. Determine the radius of the circle with a circumference of  $26\pi \text{ cm}^2$ .  $\frac{13 \text{ cm}}{26/2 = 13}$

Use the radius to then find the area.  $\frac{169\pi \text{ cm}^2 \text{ or } 530.66 \text{ cm}^2}$

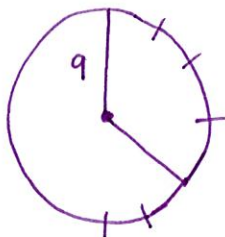
$$A = \pi r^2 \\ A = \pi(13)^2 \\ A = 169\pi \text{ cm}^2 \text{ or } 530.66 \text{ cm}^2$$

17. A sprinkler system can shoot water at a distance of 15 yards. It is set up to rotate 240 degrees. How much area of the yard is covered by the sprinkler?  $\frac{150\pi \text{ yd}^2 \text{ or } 471 \text{ yd}^2}$



$$AOS = \frac{\pi r^2 \theta}{360} \\ = \frac{\pi(15^2)(240)}{360} \\ \rightarrow = 150\pi \\ = 471$$

18. The clock in our classroom has a radius of 9 inches. If it's 4:00, find the arc length and area of the sector for this time.  $A.L. = \frac{6\pi \text{ in or } 18.84 \text{ in}}{\text{and } A.S. = \frac{27\pi \text{ in}^2 \text{ or } 84.78 \text{ in}^2}$



$$360/12 = 30 \\ 30 \cdot 4 = \theta \\ \theta = 120^\circ$$

$$\frac{AL}{AL = \frac{2\pi(9)(120)}{360} \\ = 6\pi \\ = 18.84}$$

$$\frac{AOS}{AOS = \frac{\pi(9^2)(120)}{360} \\ = 27\pi \\ = 84.78}$$