

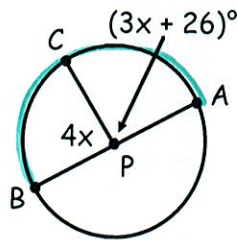
Name \_\_\_\_\_ Date: \_\_\_\_\_

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

$x = \underline{22}$

Central  
1.  $m\widehat{BC} = \underline{88}$   
 $m\widehat{AC} = \underline{92}$

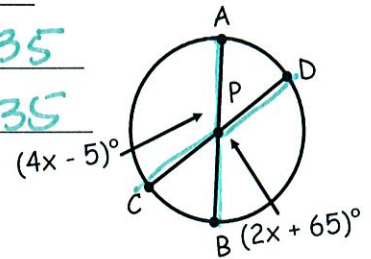
$4x + 3x + 26 = 180$   
 $7x + 26 = 180$   
 $7x = 154$



Central  $x = \underline{35}$

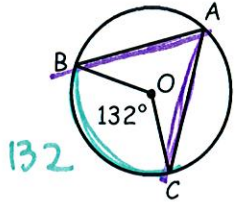
2.  $m\widehat{BD} = \underline{135}$   
 $m\widehat{AC} = \underline{135}$

$4x - 5 = 2x + 65$   
 $2x = 70$   
 $x = 35$

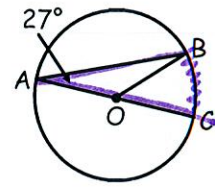


Find the measure of the indicated arc or angle in  $\square O$ .

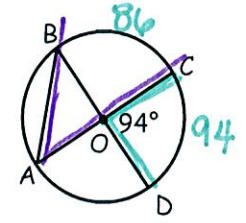
Central  
Inscribed  
3.  $m\angle BAC = \underline{66}$



Inscribed  
4.  $m\widehat{BC} = \underline{54}$



Central  
Inscribed  
5.  $m\angle BAC = \underline{43}$



Find the value of each variable.

Inscribed  
6.  $x = \underline{152}$

Inscribed  
7.  $x = \underline{13}$

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

Inscribed  
8.  $x = \underline{103}$

outside  
9.  $x = \underline{35}$

$\frac{135 - 65}{2}$

outside  
10.  $x = \underline{81}$

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

outside  
11.  $x = \underline{135}$

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

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

$$12. \text{ A.S.} = \underline{9\pi u^2}$$

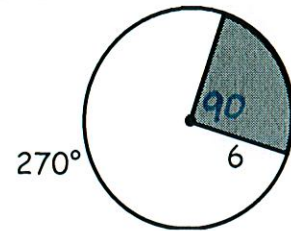
$$\frac{\theta}{360} \cdot \pi r^2$$

$$\frac{90}{360} \cdot \pi (6)^2$$

$$13. \text{ A.L.} = \underline{3\pi u}$$

$$\frac{\theta}{360} \cdot 2\pi r$$

$$\frac{90}{360} \cdot 2\pi (6)$$

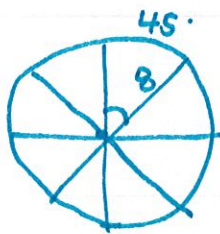


The radius of a pizza is 8 in. The pizza is cut into eighths.

14. Find the area of one piece of pizza.  $\underline{8\pi \text{ in}^2}$

$$\frac{\theta}{360} \cdot \pi r^2$$

$$\frac{45}{360} \cdot \pi (8)^2$$



15. Find the length of the crust on one piece of pizza.  $\underline{2\pi \text{ in}}$

$$\frac{\theta}{360} \cdot 2\pi r$$

$$\frac{45}{360} \cdot 2\pi (8)$$

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

Use the radius to then find the **area**.  $\underline{169\pi \text{ cm}^2}$

$$C = 2\pi r$$

$$26\pi = 2\pi r$$

$$13 = r$$

$$A = \pi r^2$$

$$= \pi (13)^2$$

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?  $\underline{150\pi \text{ yd}^2}$

$$\frac{\theta}{360} \cdot \pi r^2$$

$$\frac{240}{360} \cdot \pi (15)^2$$

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.  $\text{A.L.} = \underline{6\pi \text{ in}}$  &  $\text{A.S.} = \underline{27\pi \text{ in}^2}$

$$\frac{\theta}{360} \cdot \pi r^2$$

$$\frac{120}{360} \cdot \pi (9)^2$$

$$\frac{\theta}{360} \cdot 2\pi r$$

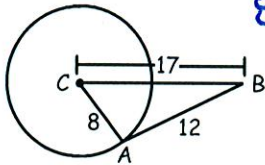
$$\frac{120}{360} \cdot 2\pi (9)$$

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Is  $\overline{AB}$  tangent to  $\odot C$ ? Explain your reasoning. Show work!

1.



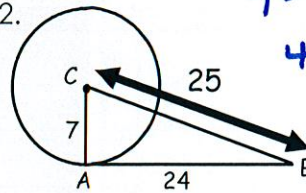
$$8^2 + 12^2 \stackrel{?}{=} 17^2$$

$$64 + 144 = 208$$

$$208 \neq 289$$

Not.

2.



$$7^2 + 24^2 \stackrel{?}{=} 25^2$$

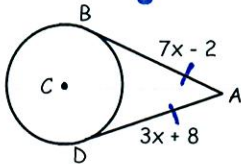
$$49 + 576 = 625$$

$$625 = 625$$

Tangent!

For each  $\odot$ , find the value of  $x$ . Assume that segments that appear to be tangent are tangent.

3. Party hat

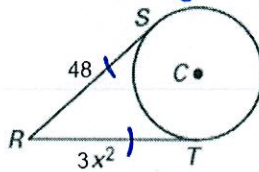


$$7x - 2 = 3x + 8$$

$$4x = 10$$

$$x = \frac{5}{2}$$

4. Party hat



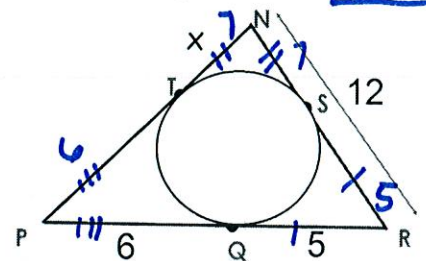
$$48 = 3x^2$$

$$\sqrt{16} = \sqrt{x^2}$$

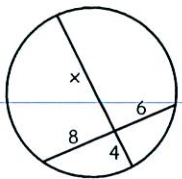
$$x = 8$$

5. Party hats

$$x = 7$$



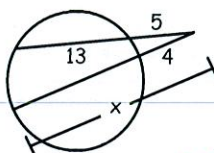
6. part · part = part · part



$$4x = 48$$

$$x = 12$$

7. part · whole = part · whole

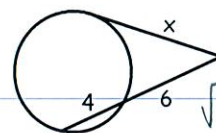


$$5(10) = 4(x)$$

$$90 = 4x$$

$$22.5 = x$$

8. tan - sec



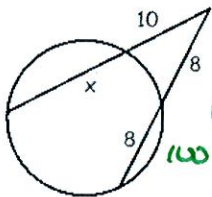
$$x^2 = 6(10)$$

$$\sqrt{x^2} = \sqrt{60}$$

$$4 \ 15$$

$$x = 2\sqrt{15}$$

9. outside



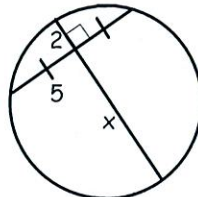
$$10(10+x) = 8(16)$$

$$100 + 10x = 128$$

$$10x = 28$$

$$x = 2.8$$

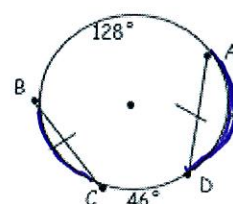
10. chord



$$2x = 25$$

$$x = 12.5$$

11. Chord properties



$$360$$

$$- 128$$

$$= 232$$

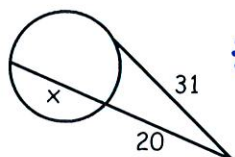
$$- 46$$

$$= 186$$

$$\div 2$$

$$x = 93$$

12. tan - secant



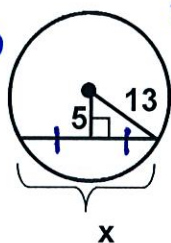
$$31^2 = 20(20+x)$$

$$961 = 400 + 20x$$

$$561 = 20x$$

$$28.05 = x$$

13. Chord properties



$$5^2 + b^2 = 13^2$$

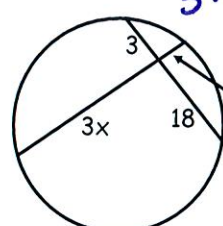
$$25 + b^2 = 169$$

$$b^2 = 144$$

$$b = 12$$

$$x = 24$$

14. Chord



$$3 \cdot 18 = 2x(3x)$$

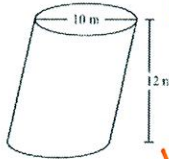
$$54 = 6x^2$$

$$\sqrt{9} = \sqrt{x^2}$$

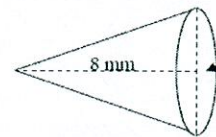
$$3 = x$$

Find the volume of the following figures.

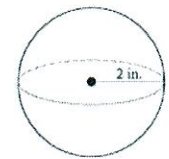
15.  $V = Bh$   
 $B = \pi r^2$   
 $= \pi (5)^2$   
 $= 25\pi$   
 $V = 25\pi (12)$   
 $= 300\pi \text{ m}^3$



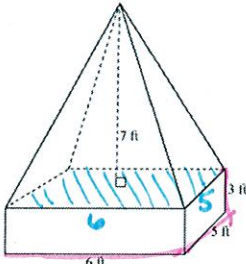
16.  $V = \frac{1}{3} Bh$   
 $B = \pi r^2$   
 $= \pi (2)^2$   
 $= 4\pi$   
 $V = \frac{1}{3} 4\pi (8)$   
 $= 10.67\pi \text{ mm}^3$



17.  $V = \frac{4}{3} \pi r^3$   
 $= \frac{4}{3} \pi (2)^3$   
 $= \frac{4}{3} \pi 8$   
 $= 10.67\pi \text{ in}^3$



18.

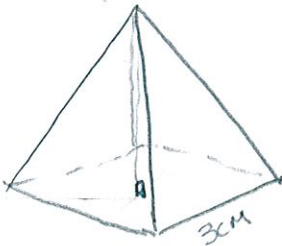


$B = l \times w$   
 $= 6(5)$   
 $= 30$


$B = l \times w$   
 $= 6(5)$   
 $= 30$

Vol of pyg. + Volume of Prism  
 $\frac{1}{3} Bh$  +  $Bh$   
 $\frac{1}{3} (30)(7)$  +  $(30)(3)$   
 $10(7)$  +  $90$   
 $70$   
100 ft<sup>3</sup>

19. A prism has a square base with a width 3 cm. Its volume is 90 cm<sup>3</sup>. A square pyramid has the same width for its base and the same height as the prism. What is the volume of the pyramid?

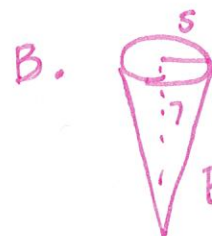


(A.)



$V = \frac{1}{3} Bh$   
 $B = \pi r^2$   
 $= \pi (6)^2$   
 $= 36\pi$   
 $V = \frac{1}{3} (36\pi)(5)$

$= 60\pi$   
 $\approx 188.50 \text{ in}^3$



$V = \frac{1}{3} Bh$   
 $B = \pi r^2$   
 $= \pi (5)^2$   
 $= 25\pi$   
 $V = \frac{1}{3} (25\pi)(7)$

$= 58.3\pi$   
 $\approx 183.30 \text{ in}^3$