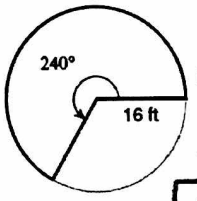
Unit 5B Review - Circles NAME KEY

Arc Length and Area of a Sector

Find each requested measurement.

1. central angle = 67°, radius = 3 m
   Find area of sector.

$A = \frac{67\pi \cdot 3^2}{360} = 5.26 m^2$

2. 

Find arc length.

$S = \frac{240\pi 16}{180}$

$S = 67.02 ft$

3. arc length = 17 in, radius = 4 in
   Find central angle.

$\frac{180}{\cdot} 17 = \frac{\theta \pi \cdot 4}{180}$ 180

$\frac{3060}{(\pi 4)} = \frac{\theta \pi 4}{\pi 4}$

$\theta = 243.51°$

4. area of sector = 34 cm², central angle = 105°
   Find radius.

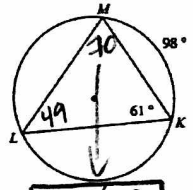
$\frac{360}{\cdot} 34 = \frac{105\pi r^2}{360}$ 360

$\frac{12240}{105\pi} = \frac{105\pi r^2}{105\pi}$

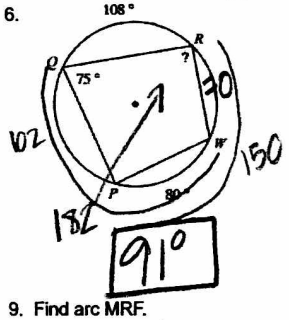
$6.09 cm = r$

Central, Inscribed, and Tangent-Chords Angles

Solve for each indicated measurement.

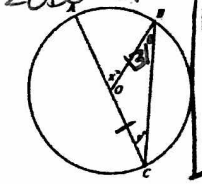
5. 

$140°$

6. 

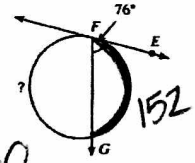
$91°$

7. $\angle OBC = 31°$



$y = 31°$

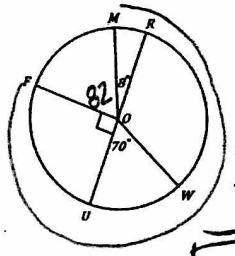
$x = 62°$

8. 

$360 - 152$

$208°$

9. Find arc MRF.

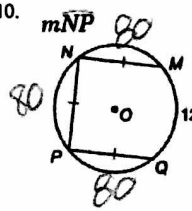


$360 - 82$

$278°$

Chords

Solve for each indicated measurement.

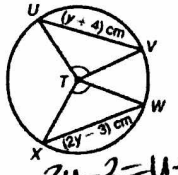
10. 

$\frac{360}{-120}$

$\frac{240}{\div 3}$

$= 80$

$80°$

11. 

$2y - 3 = y + 4$

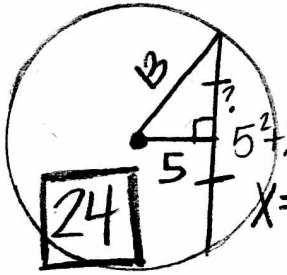
$y = 7$

12.

$4x = 3x + 22$

$x = 22$

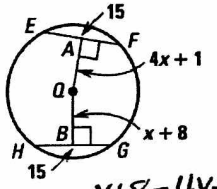
13. Suppose a chord is 5 inches from the center of a circle that has a radius of 13 inches. Determine the length of the chord.



$5^2 + x^2 = 13^2$

$x = 12$

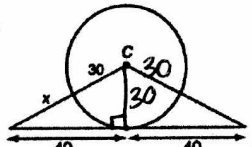
24

14. 

$x + 8 = 4x + 1$

$\frac{7}{3} = \frac{3x}{3}$

$2.33 = x$

15. 

$30^2 + 40^2 = (x + 30)^2$

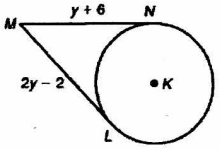
$2500 = (x + 30)$

$50 = x + 30$

$20 = x$

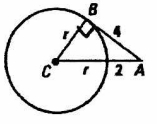
Tangents

Solve for the variable.

16. 

$2y - 2 = y + 6$

$y = 8$

17. 

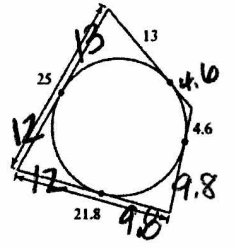
$r^2 + 4^2 = (r + 2)^2$

$r^2 + 16 = r^2 + 4r + 4$

$16 = 4r + 4$

$3 = r$

18. Find perimeter.

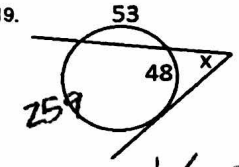


78.8

Angles Formed By Secants, Tangents, and Chords

Solve for x.

19.

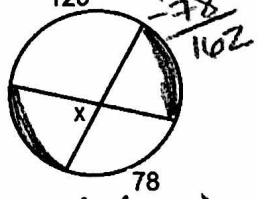


$360 - 48 - 53 = 259$

$x = \frac{1}{2}(259 - 48)$

$\boxed{x = 105.5^\circ}$

20.

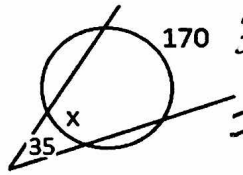


$360 - 120 - 78 = 162$

$x = \frac{1}{2}(162)$

$\boxed{x = 81^\circ}$

21.



$35 = \frac{1}{2}(170 - x)$

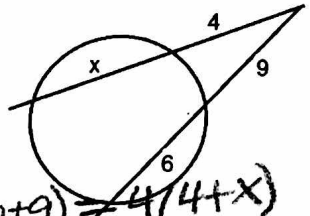
$70 = 170 - x$

$\boxed{x = 100^\circ}$

Lengths Formed By Secants, Tangents, and Chords

Solve for x.

22.

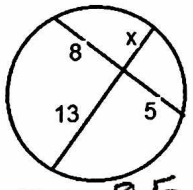


$9(6+9) = 4(4+x)$

$135 = 16 + 4x$

$\boxed{29.75 = x}$

23.

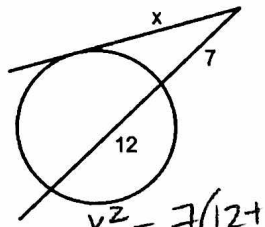


$13x = 8.5$

$13x = 40$

$\boxed{x = 3.08}$

24.



$x^2 = 7(12+7)$

$\sqrt{x^2} = \sqrt{133}$

$\boxed{x = \sqrt{133} = 11.53}$

Fun with Factoring!!

Factor.

25. $4x^2 - 9$

$(2x+3)(2x-3)$

26. $-6g^7 + 7g^4$

$-g^4(6g^3 - 7)$

27. $w^2 - 5w + 6$

$(x-3)(x-2)$

28. $5a^3 - 10a^2 - 15a$

$5a(a^2 - 2a - 3)$

$5a(a-3)(a+1)$

29. $3x + 2$

Does not factor!

30. $20x^2 + 13x + 2$

$40x^2$

$20x^2 + 5x + 8x + 2$

$8x + 5x = 13x$

$5x(4x+1) + 2(4x+1)$

$(4x+1)(5x+2)$