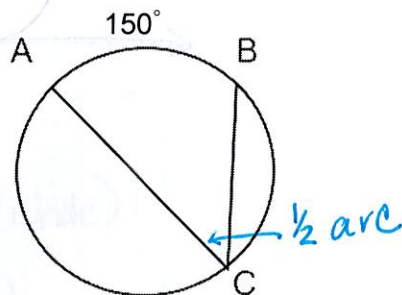


75°

1. What is the measure of  $\angle C$ ?

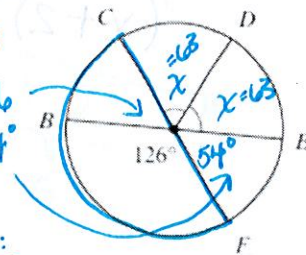


234°

2. What is the measure of arc EFC?

Step 1:

$$180 - 126 = 54^\circ$$



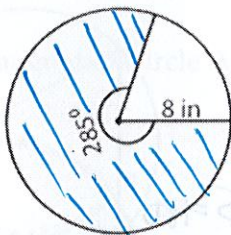
Step 2:

$$360 - 126 - 54 - 54 = 126 \div 2 = 63$$

Step 3: add up angles of EFC

39.79 in

3. Find the arc length of the shaded region. Round to the hundredths place.

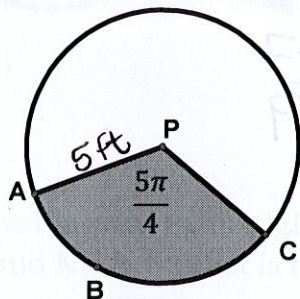


$$s = \frac{\theta}{360} \cdot 2\pi r$$

$$= \frac{285}{360} \cdot 2\pi(8) = 39.79$$

$\frac{125\pi}{8} \text{ ft}^2$

4. Find the area of sector of the shaded region. Leave in terms of  $\pi$ .



$$s = \frac{\theta}{2} \cdot r^2$$

$$= \frac{5\pi}{4} \cdot (5)^2 = \frac{125\pi}{8} \text{ ft}^2$$

5. a) Write the circle equation  $x^2 + y^2 - 6x + 4y - 3 = 0$  in standard form.

$$(x^2 - 6x + 9) + (y^2 + 4y + 4) = 3 + 9 + 4$$

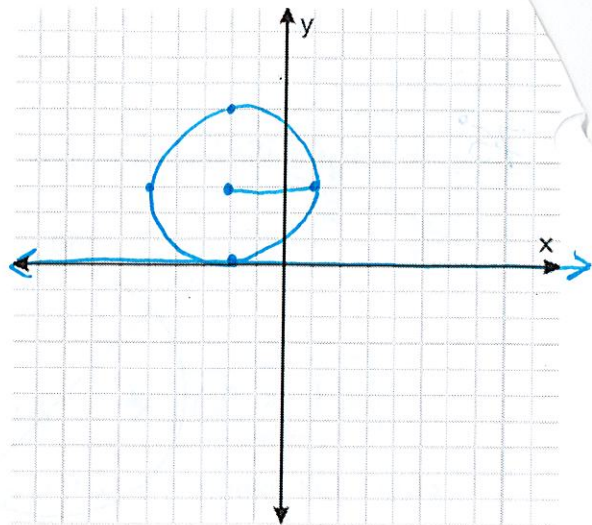
$$(x - 3)^2 + (y + 2)^2 = 16$$

b) Identify the Center: (3, -2) Radius: 4

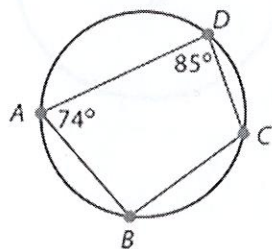
6. Write the equation of the circle with a center at  $(-2, 3)$  and tangent to the x-axis. Then graph the circle.

$r = 3$

$$(x+2)^2 + (y-3)^2 = 9$$



7. Find the missing angles.



$\angle B = 95^\circ$

$\angle C = 106^\circ$

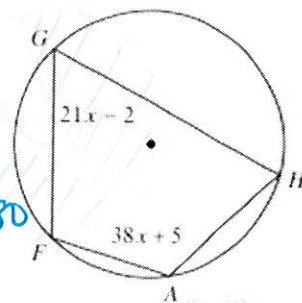
8. Solve for x.

$x = 3$

$$21x - 2 + 38x + 5 = 180$$

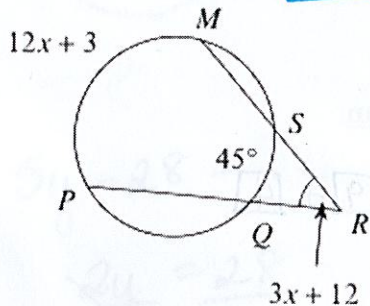
$$59x + 3 = 180$$

$$\frac{59x}{59} = \frac{177}{59}$$



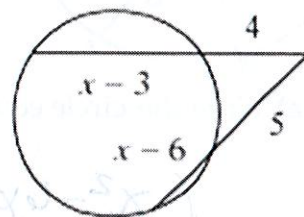
9. Solve for x.

$x = 11$



$\frac{\text{Big arc} - \text{Small arc}}{2} = \text{outside}$

10. Solve for x.



$\text{outside (whole)} = \text{outside (whole)}$

$$4(x+1) = 5(x-1)$$

$$4x + 4 = 5x - 5$$

$9 = x$

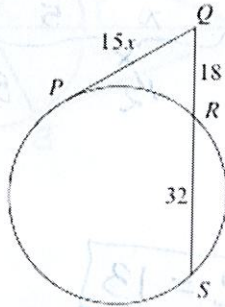
$$\frac{(12x+3) - 45}{2} = 3x + 12$$

$$12x - 42 = 6x + 24$$

$$\frac{6x}{6} = \frac{66}{6}$$



11. Solve for x.



$(\text{outside})^2 = \text{outside}(\text{whole})$

$$(15x)^2 = 18(50)$$

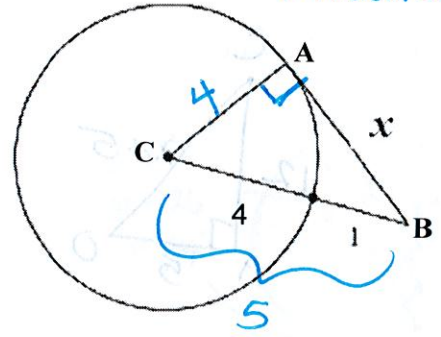
$$\frac{225x^2}{225} = \frac{900}{225}$$

$$x^2 = 4$$

$$x = 2$$

12. AB is tangent to Circle C. Find x.

*all radii are the same*



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

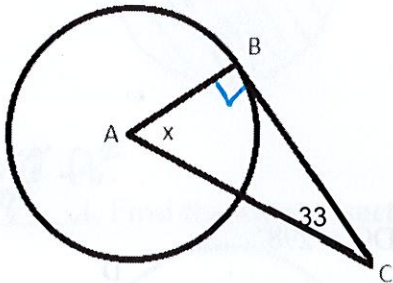
$$x^2 + 4^2 = 5^2$$

$$x^2 + 16 = 25$$

$$x^2 = 9$$

$$x = 3$$

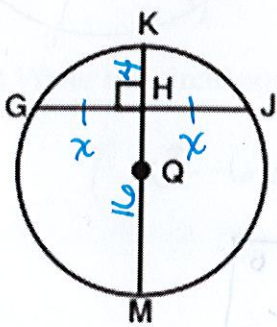
13. BC is tangent to Circle A. Find x.



$$\begin{array}{r} 180 \\ - 90 \\ \hline 90 \\ - 33 \\ \hline 57 \end{array}$$

$$x = 57^\circ$$

14. In the diagram to the right, diameter KM is perpendicular to chord GJ and intersects at H. If MH = 16, and KH = 4. What is HJ?



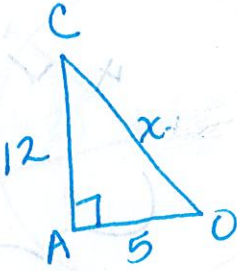
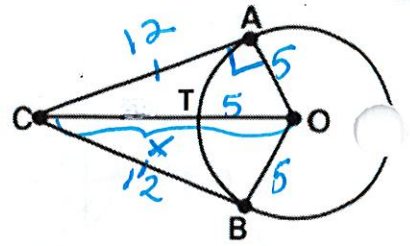
*\* a diameter cuts a chord into 2 congruent halves*

$$16(4) = x \cdot x$$

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

$$x = 8 \rightarrow HJ = 8$$

15. In the figure to the right, AC and BC are tangent to circle O. If OT = 5 cm and BC = 12 cm, what is the length of OC?



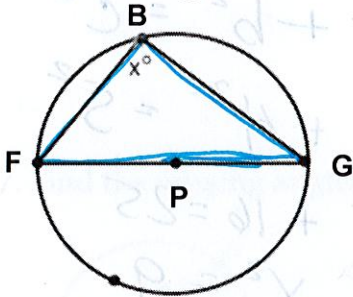
$$(12)^2 + (5)^2 = x^2$$

$$144 + 25 = x^2$$

$$\sqrt{169} = \sqrt{x^2}$$

$$x = 13 \rightarrow \boxed{OC = 13}$$

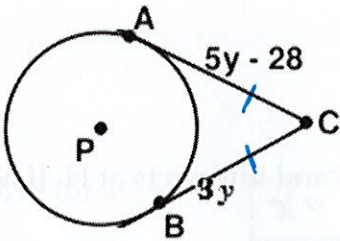
16. In the diagram below, isosceles triangle BFG is inscribed in circle P with diameter FG. Find x.



$\angle B$  opens up to a semi-circle & is inscribed

$$x = 180 \div 2 = \boxed{90^\circ}$$

17. Find the length of AC.



$$5y - 28 = 3y$$

$$\frac{2y}{2} = \frac{28}{2}$$

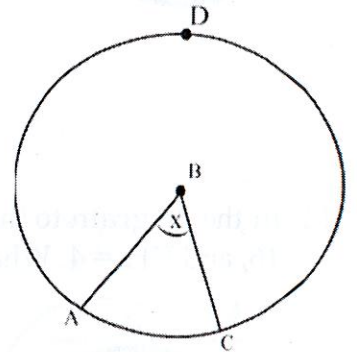
$$y = 14$$

$$AC = 5(14) - 28$$

$$\boxed{AC = 42}$$

18. The measure of arc ADC =  $298^\circ$ .

Find the measure of x.



$$\frac{360}{-298}$$

$$\underline{\hspace{1cm}}$$

$$62$$

$$\boxed{x = 62^\circ}$$