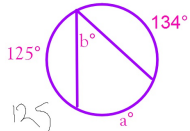


Warm-up:

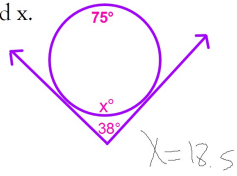
1) Find a and b.



$$\begin{array}{r} 125 \\ 134 \\ \hline 259 \\ 360 \\ \hline -259 \\ \hline 101 \\ 6 = 50.5 \end{array}$$

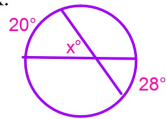
$a = 101$
 $b = 50.5$

2) Find x.



$$x = 18.5$$

3) Find x.

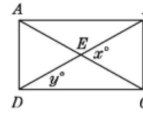


$$20 + 28 = 48 - 2 = 24$$

$$x = 24$$

ACT/SAT Practice:

10)



In rectangle $ABCD$, if $y = 24$, then $x =$

Trig Review

1. what are the formulas for $\tan \theta$ $\cot \theta$ $\sec \theta$ $\csc \theta$

$$\tan \theta = \frac{\sin \theta}{\cos \theta} \quad \cot \theta = \frac{\cos \theta}{\sin \theta} \quad \sec \theta = \frac{1}{\cos \theta} \quad \csc \theta = \frac{1}{\sin \theta}$$

2. Simplify $\cos \theta \tan \theta$

$$\frac{\cos \theta \cdot \sin \theta}{\cos \theta} = \sin \theta$$

3. Simplify $\sec x - \tan x \sin x = \frac{1}{\sec x}$

$$\frac{\sin^2 \theta + \cos^2 \theta}{-\sin^2 \theta} = \frac{1}{-\sin^2 \theta}$$

$$\cos^2 \theta = 1 - \sin^2 \theta$$

$$\frac{1}{\cos^2 \theta} - \frac{\sin \theta}{\cos \theta} \cdot \sin \theta$$

$$\frac{1}{\cos^2 \theta} - \frac{\sin^2 \theta}{\cos \theta} = \frac{1 - \sin^2 \theta}{\cos^2 \theta}$$

$$= \frac{\cos^2 \theta}{\cos^2 \theta} = \frac{\cos \theta \cos \theta}{\cos^2 \theta} = \frac{1}{\sec \theta}$$

4. Simplify $(1 - \cos x)(1 + \cos x)$

$$\begin{array}{|c|c|} \hline 1 & \cos x \\ \hline \cos x & \cos^2 x \\ \hline \end{array}$$

$$1 - \cos^2 x = \sin^2 x$$

$$\sin^2 \theta + \cos^2 \theta = 1$$

$$-\cos^2 \theta - \cos^2 \theta$$

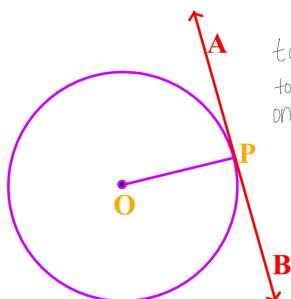
$$\sin^2 \theta = 1 - \cos^2 \theta$$

Unit 2 ~ Circles

Objective: G.C.4

Day 2 - Tangents of Circles

If \overline{AB} is a tangent to Circle O at P, then

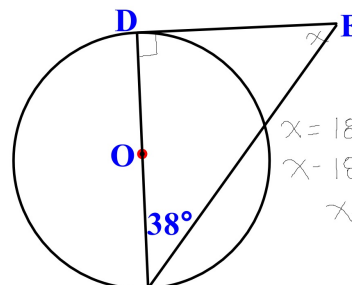


tangent - line that touches the circle in one place.

forms a right angle.
 \overline{AB} is perpendicular to \overline{OP}

Example 1:

\overline{ED} is tangent to Circle O. Find x.



$$x = 180 - (38 + 90)$$

$$x = 180 - 128$$

$$x = 52$$

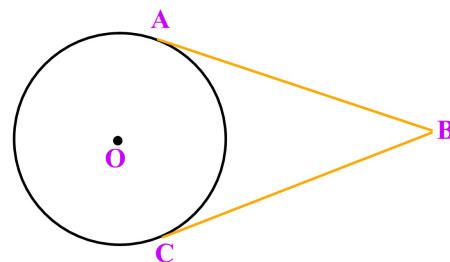
Example 2:

What is the radius of Circle C?

$a^2 + b^2 = c^2$
 $12^2 + x^2 = (x+8)^2$
 $144 + x^2 = x^2 + 16x + 64$
 $144 - 64 = 16x + 64 - 64$
 $80 = 16x$
 $x = 5$

| | | |
|---|-------|------|
| | x | 8 |
| x | x^2 | $8x$ |
| 8 | $8x$ | 64 |

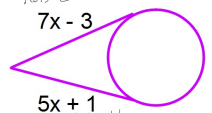
If \overline{BA} and \overline{BC} are tangent to Circle O, then ...



congruent
 $\overline{BA} \cong \overline{BC}$

Example 3:

Find the value of x.



$7x - 3 = 1$
 $7x - 3 = 1$

$5x + 1$
 $5x + 1 = 1$

$$\begin{array}{r} 7x - 3 = 5x + 1 \\ + 3 \qquad + 3 \\ \hline 7x = 5x + 4 \\ - 5x \quad - 5x \\ \hline 2x = 4 \\ x = 2 \end{array}$$