

Tangent-Radius Quiz

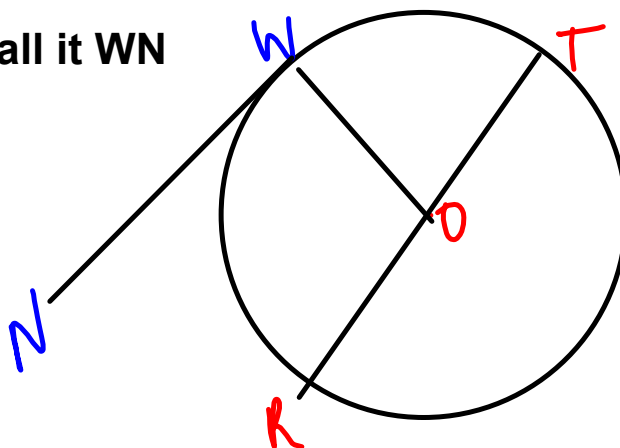
12 minutes!



Warm-Up

May 17, 2018

1. Label the center O
2. Draw a diameter and label RT
3. draw a radius from point O and call the endpoint W.
4. Draw a tangent and call it WN



SECTION 8.2

PROPERTIES OF A CHORD

A line segment that joins two points on a circle is a **CHORD** [from one side of the circle to the other]

A diameter of the circle is a chord that goes through the center of the circle.

Use 2 Letters to name a line

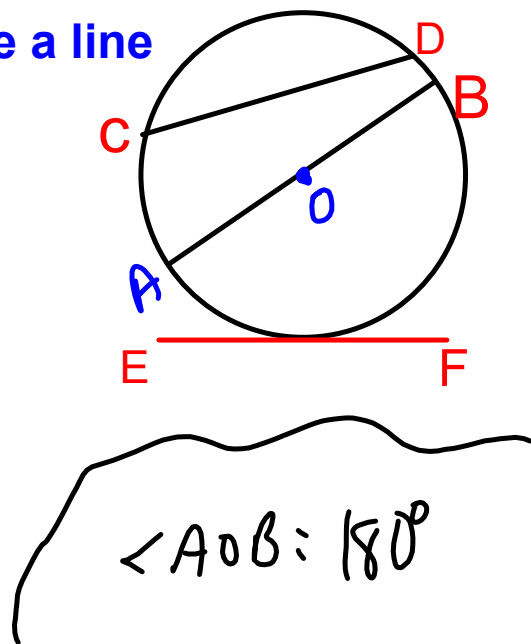
1. Name the tangent. EF/FE

2. Name the chord[s].

CD, AB

3. Name the diameter

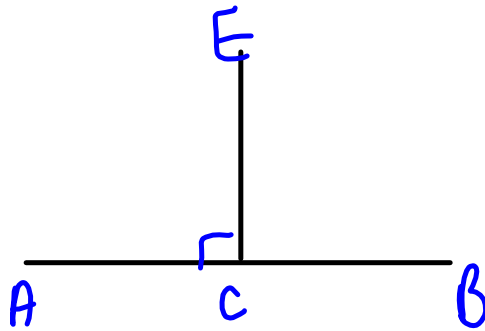
AB



[90° angle.] [2 parts] [meet]

A perpendicular bisector intersects a line segment at 90° and divides the line segment into two equal parts.

$$\angle ACE = 90^\circ$$
$$\angle BCE = 90^\circ$$



$$AB = 16\text{cm}$$
$$AC = 8\text{cm}$$
$$CB = 8\text{cm}$$

Properties of a CHORD

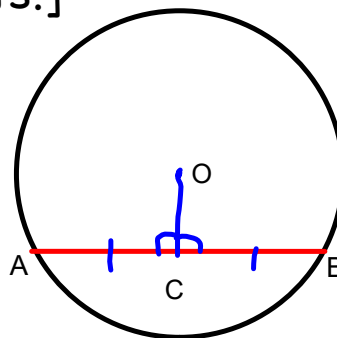
1. Perpendicular to chord Property 1

The perpendicular from the center of a circle to a chord bisects the chord [that is the perpendicular divides the chord into two equal parts.]

$$AC = CB$$

$$\angle ACO = \angle BCO$$

90° 90°



$$AB = 16$$

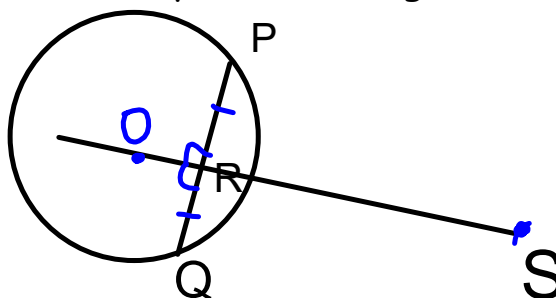
$$AC = 8$$

$$CB = 8$$

2. Perpendicular to Chord Property 2

The perpendicular bisector of a chord in a circle passes through the center of the circle.

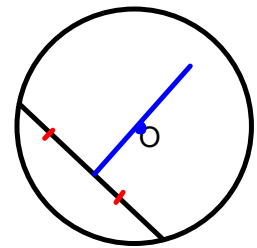
When $PR = QR$ and $\angle SRP = \angle SRQ$ then SR passes through O [the center of the circle]



To Summarize

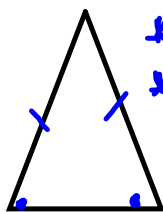
A perpendicular bisector of a chord:

- * Hits the chord at a 90° angle
- * Cuts the chord into two equal parts
- * Passes through the center

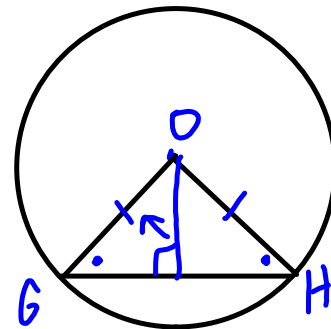


Review

Isosceles triangle



- * Two equal sides
- * Base angles are equal



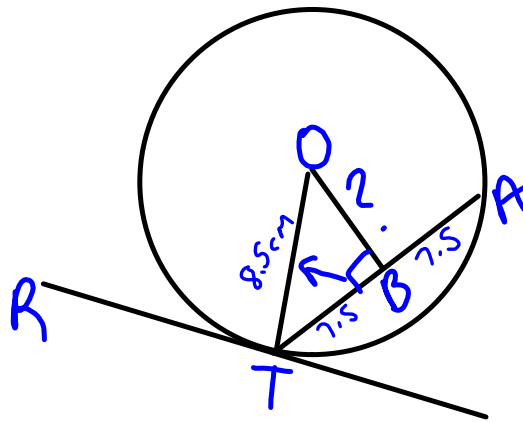
Draw a circle that includes the following information:

1. A tangent [RT] where T is the point of tangency

2. Label the center O

3. A radius [OT]

4. A cord [TA]



5. Perpendicular line from O to the chord [point B]

6. If the diameter of the circle is ~~17~~³⁵ and the chord length is 15 what is the distance from the center of the circle to the chord?

$$a^2 = c^2 - b^2$$

$$a^2 = 8.5^2 - 7.5^2$$

$$a^2 = 72.25 - 56.25$$

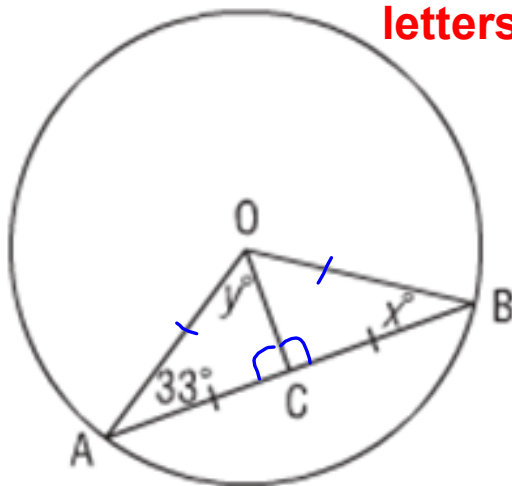
$$a^2 = 16$$

$$a = 4$$

Let's apply these properties of a chord...

Find the value of y and x

An angle has to be named using 3 letters!!!



Name angles	Value
$\angle OBC$	33°
$\angle AOC$	57°
$\angle OCA$	90°
	<hr/>
	180°