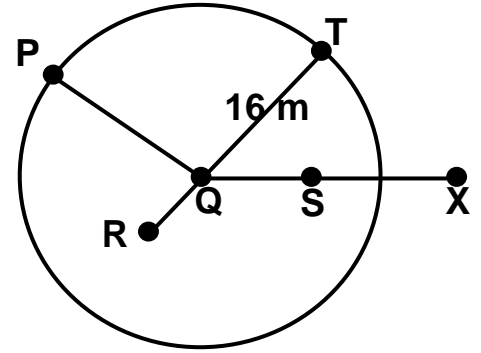


TOPIC 13-1: LINES THAT INTERSECT CIRCLES

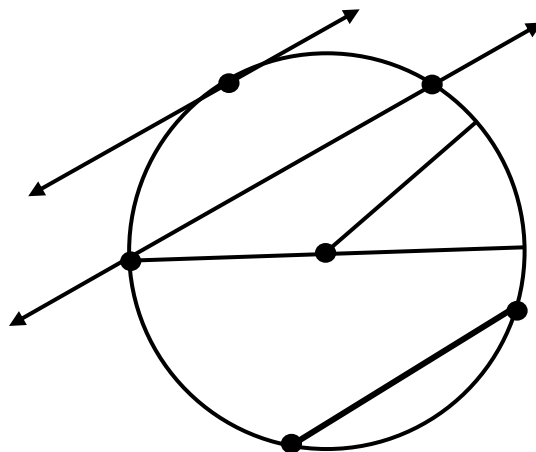
EXAMPLE 1: Q is the center of this circle.



- Name the circle: _____
- Name a radius shown: _____
- What is the length of any radius of this circle? _____
- What would be the length of any diameter of this circle? _____
- Name all the interior points shown: _____
- Name all the exterior points shown: _____

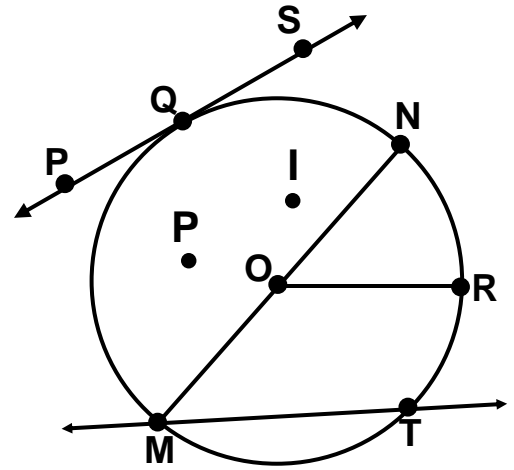
Some other components of a circle that you need to be able to identify...

TERM:	DEFINITION:
Chord	
Secant	
Tangent	
Radius	
Diameter	



EXAMPLE 2: Name each of the following:

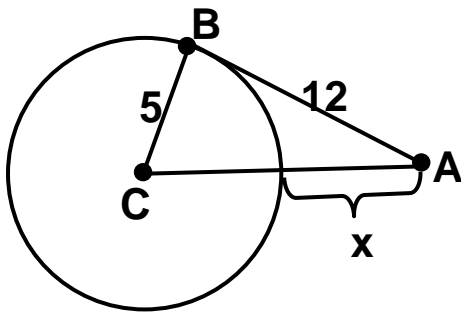
- a) Center: _____
- b) All Radii: _____
- c) All Chords: _____
- d) All Secants: _____
- e) Diameter: _____
- f) Tangent: _____
- g) Point of Tangency: _____
- h) Interior Points: _____
- i) Exterior Points: _____



THEOREM:

If a line is tangent to a circle, then it is PERPENDICULAR to the radius drawn to the point of tangency.

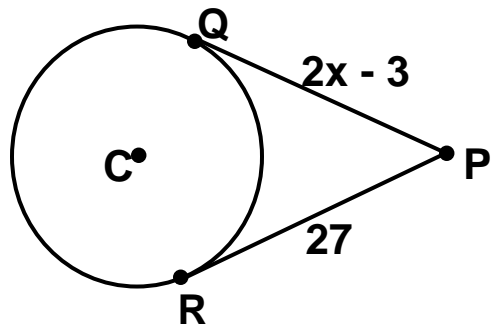
EXAMPLE 3: Refer to $\odot C$ with tangent \overline{AB} . Find 'x'.



THEOREM:

If two segments from the same EXTERIOR point are tangent to a circle, then they are congruent.

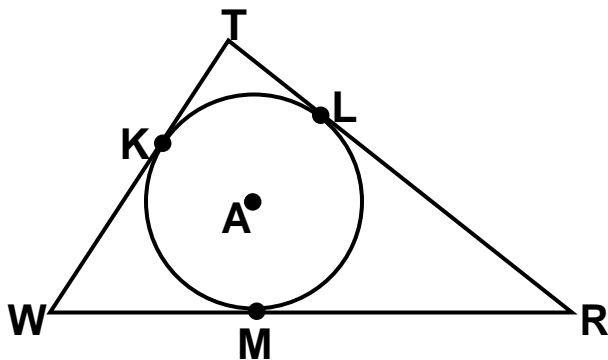
EXAMPLE 4: Find the value of 'x'.



When circles are inscribed in polygons, the polygons are said to be **CIRCUMSCRIBED** polygons.

In such polygons, each side is **TANGENT** to the circle.

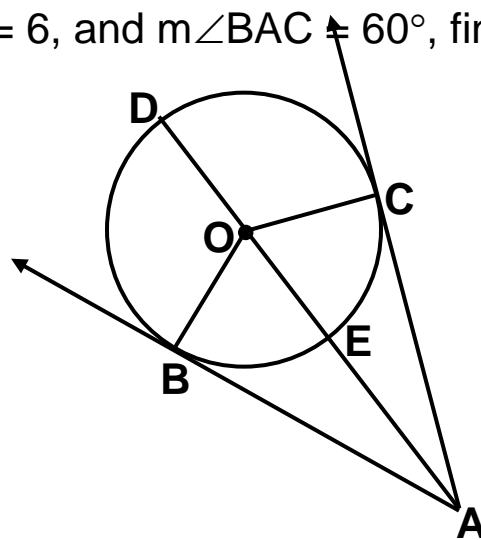
EXAMPLE 5: $\triangle TRW$ is circumscribed about $\odot A$. If the perimeter of $\triangle TRW$ is 50, $TK = 3$, and $WM = 9.5$, find TR .



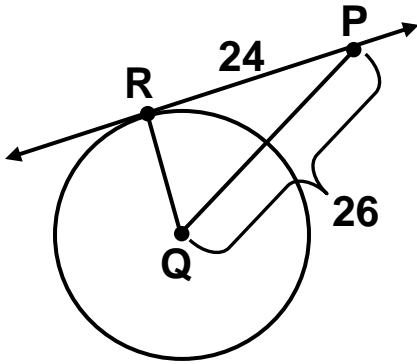
$TR =$ _____

EXAMPLE 6: Given that $OA = 12$, $OB = 6$, and $m\angle BAC = 60^\circ$, find the following.

- $OC =$ _____
- $ED =$ _____
- $AB =$ _____
- $AC =$ _____
- $m\angle BAO =$ _____
- $m\angle OCA =$ _____
- $m\angle AOC =$ _____
- $m\angle EOC =$ _____
- $EA =$ _____

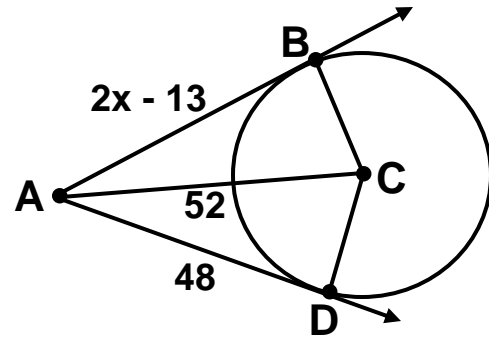


EXAMPLE 7: In the figure below, \overleftrightarrow{RP} is tangent to circle Q at R. Find the radius of circle Q.



$r =$ _____

EXAMPLE 8: Find the indicated values.



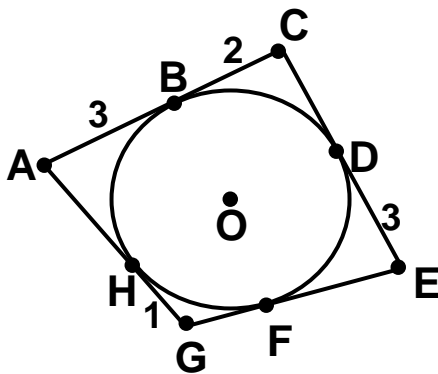
$x =$ _____

$m\angle ABC =$ _____

$BC =$ _____

Diameter of circle C = _____

EXAMPLE 9: Find the perimeter of the polygon that circumscribes the circle.



$P =$ _____