

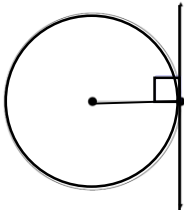
**Learning Objective(s)** \_\_\_\_\_:

**Main Ideas/  
Questions**

Tangent  
Characteristics

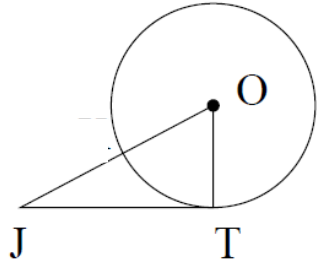
**Notes**

- If a line is tangent to a circle, then the tangent and the radius are \_\_\_\_\_

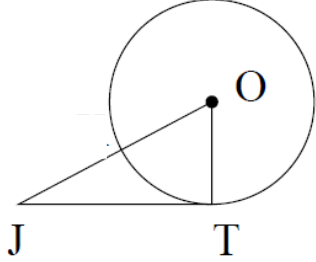


Examples

1. JT is tangent to Circle O. If JT = 12 and OT = 5, what is JO?

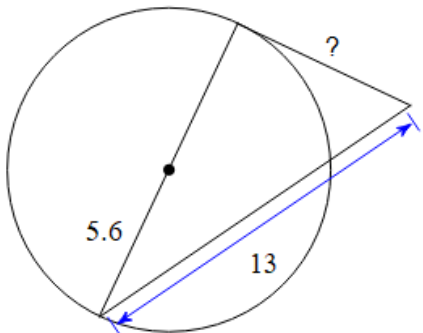


2. If JT = 12 and JO = 20, what is the radius?

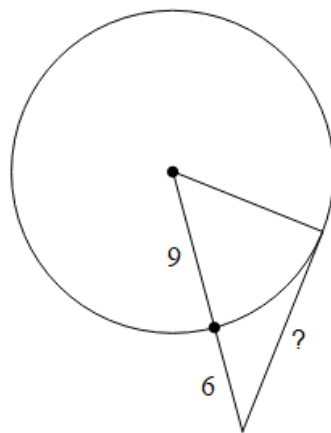


**Solve for the missing length. Assume that lines which appear to be tangent are tangent.**

3.



4.



**Main Ideas/  
Questions**

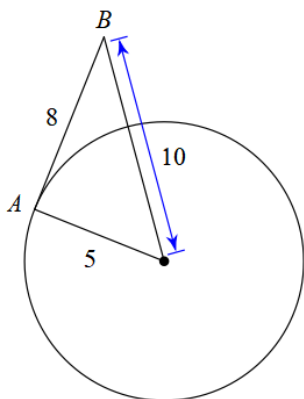
Examples

**2<sup>nd</sup> Tangent  
Property**

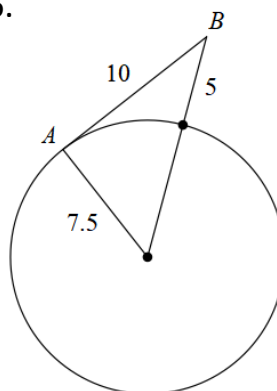
**Notes**

**Determine if BA is a tangent line**

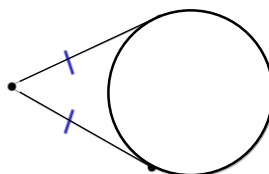
5.



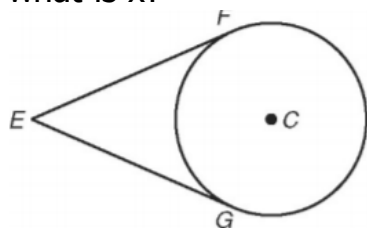
6.



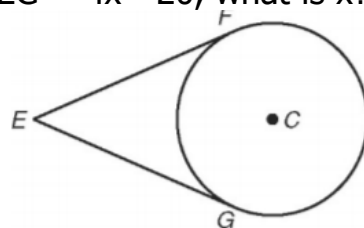
- If two tangent lines are tangent to the \_\_\_\_\_ circle AND come from the same \_\_\_\_\_, then the tangent lengths are \_\_\_\_\_



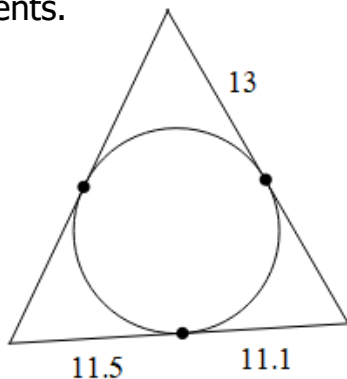
1. If  $EF = 2x + 10$  and  $EG = 20$ , what is  $x$ ?



2. If  $EF = 2x + 10$  and  $EG = 4x - 20$ , what is  $x$ ?

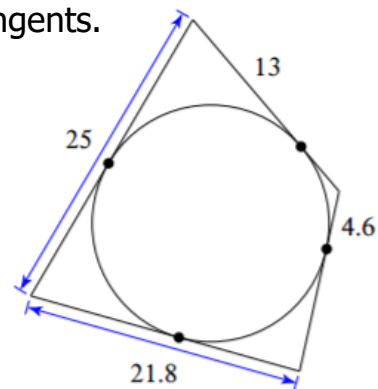


3. a. Find the lengths of all the tangents.



b. What is the perimeter of the triangle?

4. a. Find the lengths of all the tangents.



b. What is the perimeter of the quadrilateral?