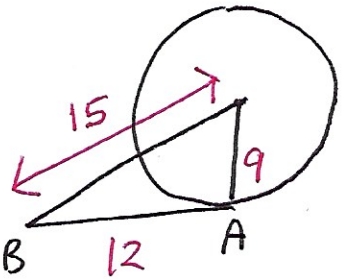
ch 10.5 Tangent thm

In a plane, a line is tangent to a circle, if and only if, it is perpendicular (90°) to a radius drawn to the point of tangency

#1



Is $\overline{AB}$ tangent to circle?

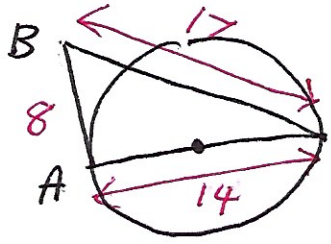
$$9^2 + 12^2 \stackrel{?}{=} 15^2$$

$$81 + 144 = 225$$

$$225 = 225 \checkmark$$

Yes, tangent

#2



Is $\overline{AB}$ tangent to circle?

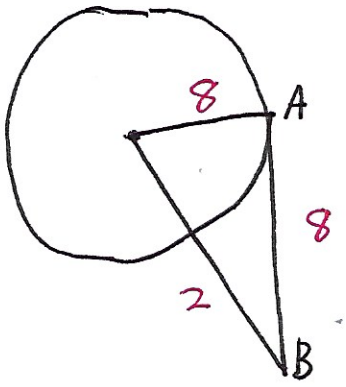
$$8^2 + 14^2 = 17^2$$

$$64 + 196 = 289$$

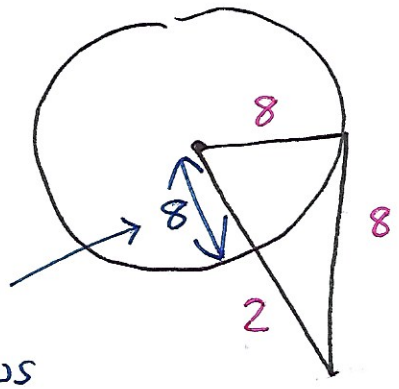
$$260 \neq 289$$

No, not tangent

#3



Is $\overline{AB}$ tangent to circle
First compute hypotenuse length

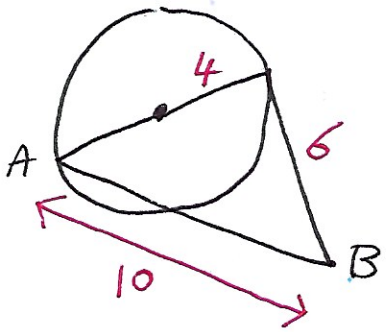


this is a radius of 8 units,
so Hypotenuse is 10 units

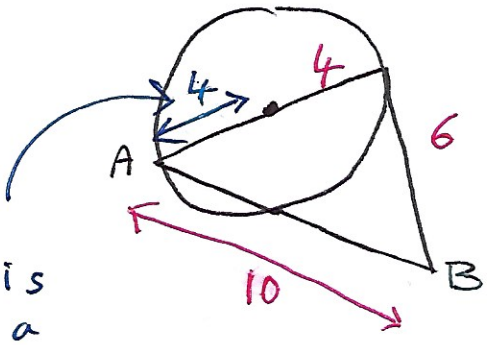
$$8^2 + 8^2 = 10^2$$
$$64 + 64 = 100$$
$$128 \neq 100$$

No, not tangent

#4



Is $\overline{AB}$ tangent to circle
First compute side length.



this is a radius of 4 units
so side length is 8 units

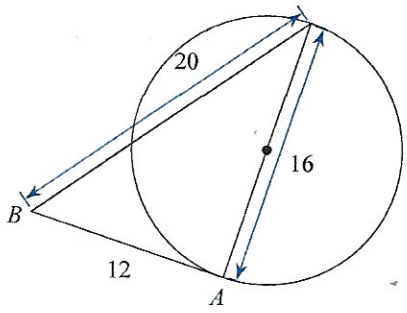
$$6^2 + 8^2 = 10^2$$
$$36 + 64 = 100$$
$$100 = 100$$

yes, tangent

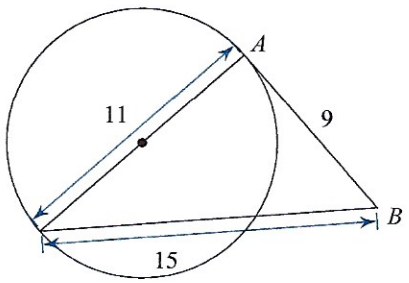
ch 10.5 Practice problems

Determine if line AB is tangent to the circle.

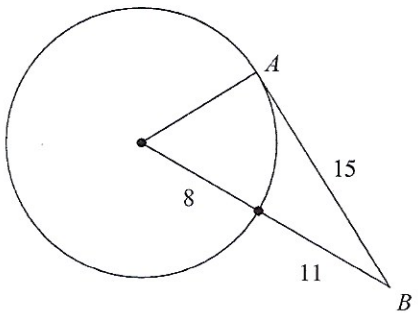
1)



2)



3)



4)