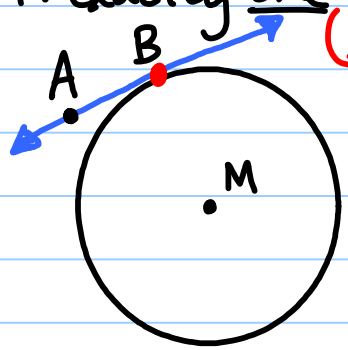
4/18 WED

14.2 Tangents to a Circle

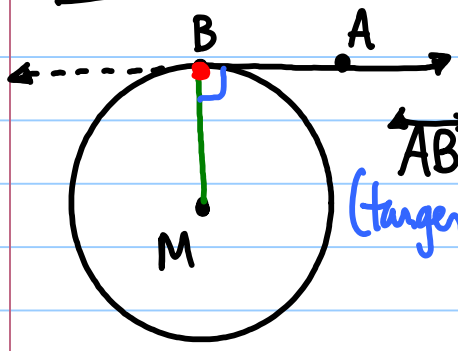
In a plane, a line is tangent if and only if it intersects a circle in exactly one point.



(point of tangency)

$\overleftrightarrow{AB}$ is tangent to $\odot M$

Thm 14.4

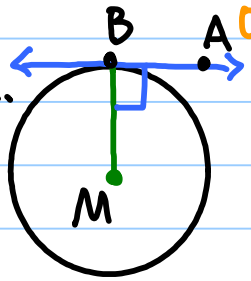


$\overleftrightarrow{AB} \perp \overline{MB}$

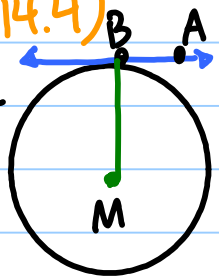
(tangent) (radius)

Thm 14.5 (Converse of Thm 14.4)

If...

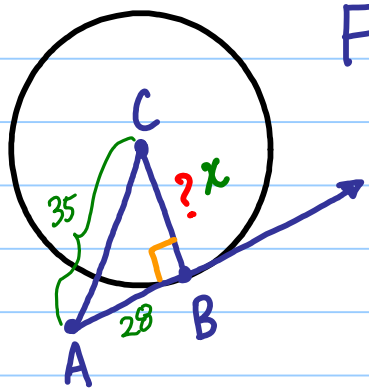


Then...



$\overleftrightarrow{AB}$ is tangent to $\odot M$

ex 1)



Find BC. ($\overleftrightarrow{AB}$ is tangent to $\odot C$)

→ tangents form a rt ∠

→ rt. Δ

Pythag Thm: $a^2+b^2=c^2$

$28^2+x^2=35^2$

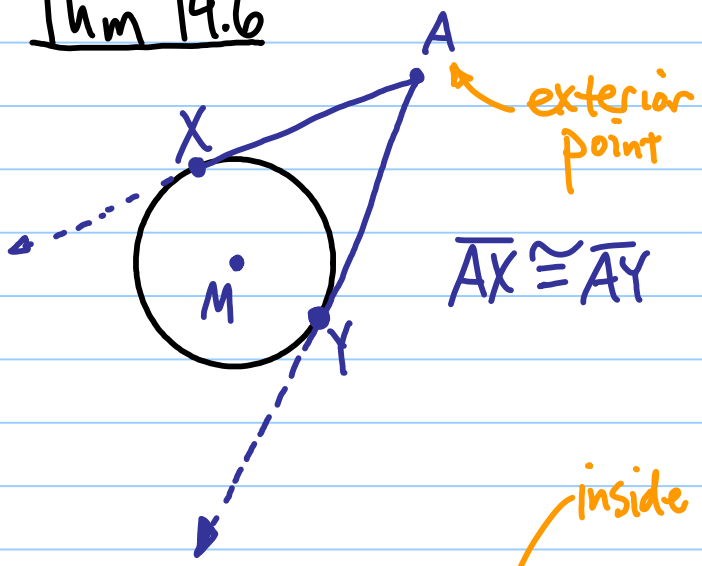
$784+x^2=1225$

$-784 \quad -784$

$x^2=441$

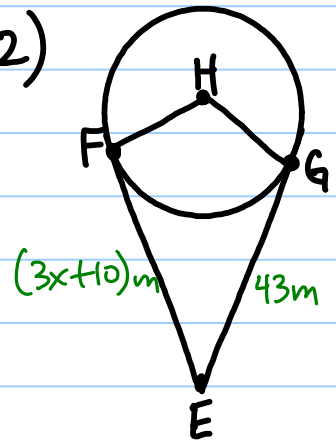
$x=\sqrt{441}=21$

Thm 14.6



$\overline{AX} \cong \overline{AY}$

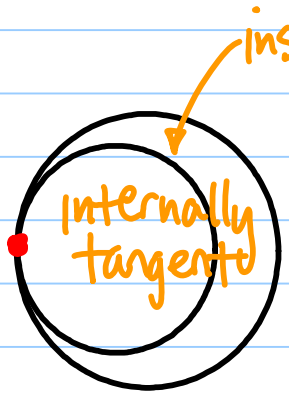
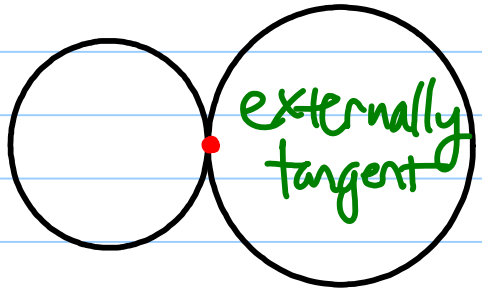
ex 2)



Find x.

$3x+10=43$

$-10 \quad -10$

$\frac{3x}{3} = \frac{33}{3}$

$x=11$