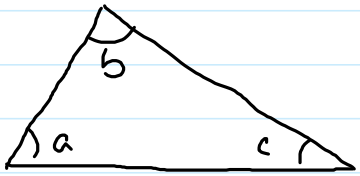
8.1 Properties of Tangents to a Circle

June 5, 2015 3:22 PM

RECALL

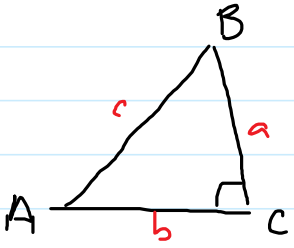
Sum of a triangle



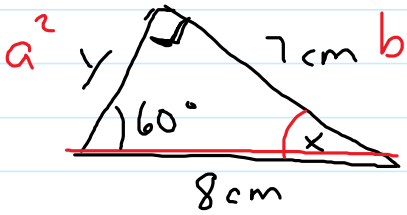
$a + b + c = \boxed{180^\circ}$

Pythagorean Theorum

$a^2 + b^2 = c^2$



Ex. #1



$\angle X \Rightarrow 90 + 60 = 150$

$180 - 150 = \boxed{30^\circ}$

$a^2 + b^2 = c^2$

$a^2 + 7^2 = 8^2$

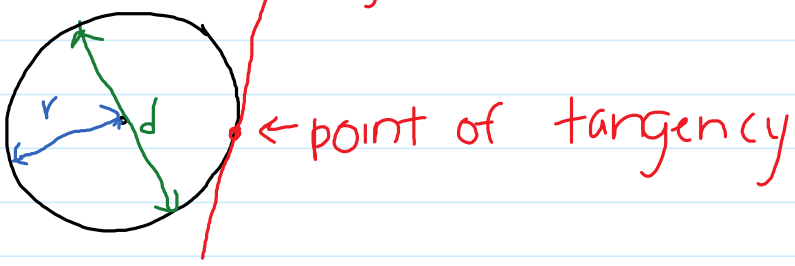
$a^2 + 49 = 64$

$-49 \quad -49$

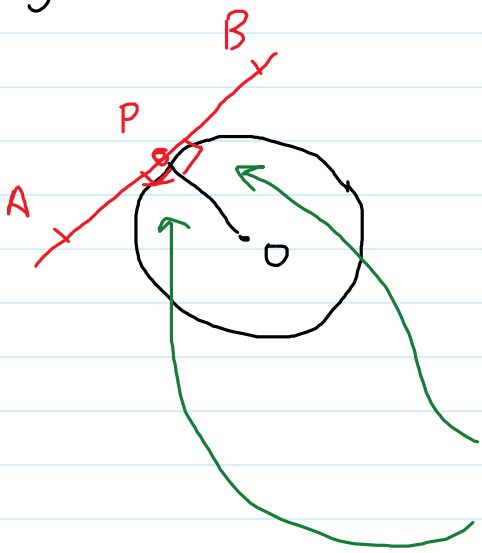
$\sqrt{a^2} = \sqrt{15}$

$a = \boxed{3.87\text{cm}}$

A tangent touches a circle at exactly 1 point



Tangent Radius Property



A tangent to a circle is perpendicular to the radius drawn to the point of tangency

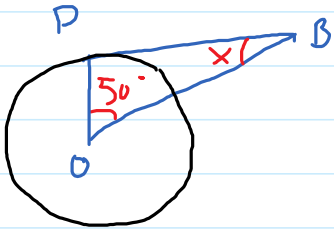
So $OP \perp AB$

$\angle OPA = 90°$

$\angle OPB = 90$

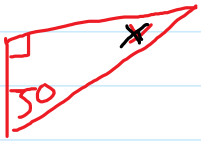
Ex #1

Find the measure of $x°$



BP is tangent to the circle at P

O is the centre of the circle

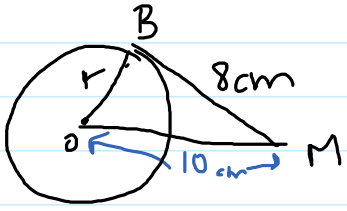


$90 + 50 = 140$

180

$\boxed{40°}$

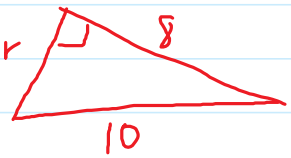
Ex. #2



MB is tangent to the circle at B

O is the centre

Find the length of the radius OB (r)



$a^2 + b^2 = c^2$

$a^2 + 8^2 = 10^2$

$a^2 + 64 = 100$

$-64 \quad -64$

$-64 \quad -64$

$\sqrt{a^2} = \sqrt{36}$

$\boxed{a = 6}$

pg 388 # 3-9, 13