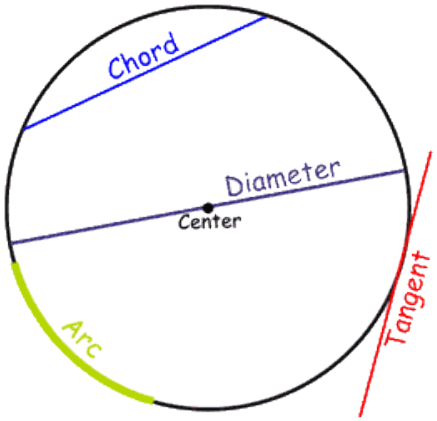
Section 8.1

May 7

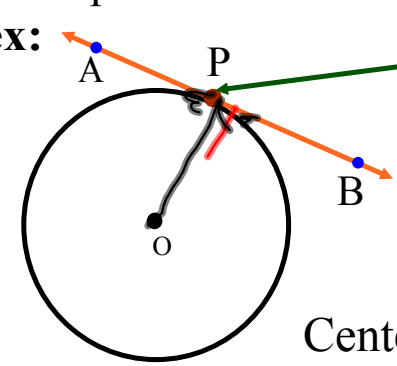
Properties of Tangents to a Circle



Tangent Properties

- **tangent -** a line that touches a circle/curve at only 1 point.
  - the point of contact is called the **point of tangency.**

ex:



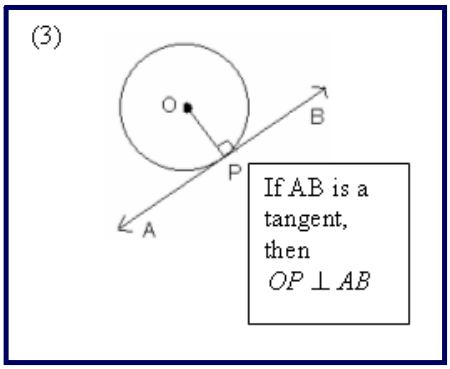
Line AB is a tangent

"P" is the **point of tangency**

Center of the circle is Denoted by "O"

Tangent Property:

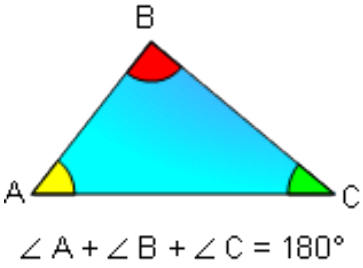
A tangent to a circle is perpendicular to the radius at the point of tangency. <APO = <BPO = 90°



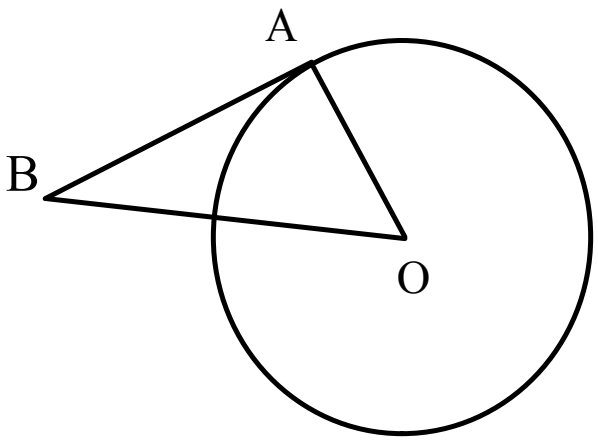
"Join O to B and you have formed a right triangle. Thus, you can use the Pythagorean Theorem to find side lengths." (OR Angle sum of triangle to find missing angles)

Determining the measure of an angle in a triangle

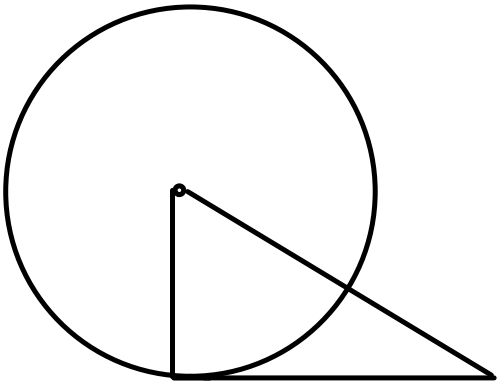
Remember: Angles in a triangle add up to 180°



1) Point O is the centre of a circle and AB is a Tangent to the circle. In ΔOAB, <AOB = 56°. Determine the measure of <OBA.
(Show all Work)

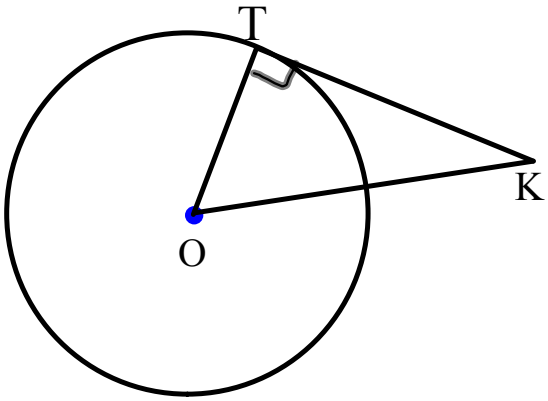


Example:



Using the Pythagorean Theorem in a Circle

2) Point O is the center of a circle and TK is a tangent to the circle. TK is 20cm and OK = 30cm. Determine the length of the radius OT. Give the answer to the nearest tenth. (Show all Work)



Remember:

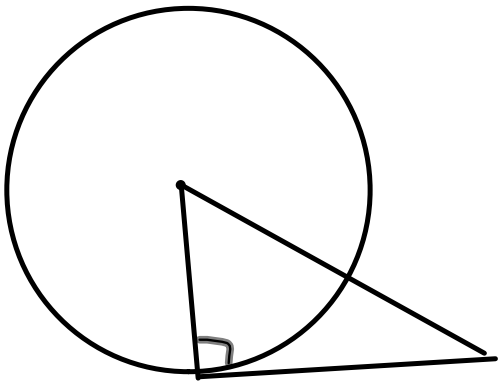
$a^2 + b^2 = c^2$

$c = \sqrt{a^2 + b^2}$

or

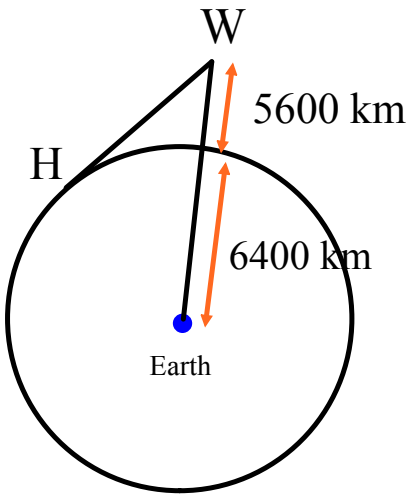
$a = \sqrt{c^2 - b^2}$

Example:



Solving Problems Using the Tangent and Radius Property

An airplane, W, is cruising at an altitude of 5600m. A cross section of Earth is a circle with radius approximately 6400 km. A passenger wonders how far she is from a point H on the horizon she sees outsied the window. Calculate this distance to the nearest kilometre.



Class/Homework

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3, 4, 5, 6, 7, 8, 9

Attachments

Section 8.1 Sticky Note Activity.docx