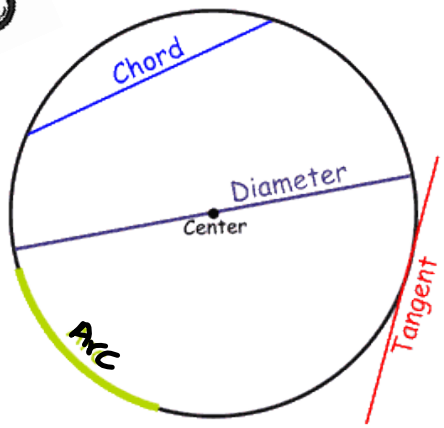
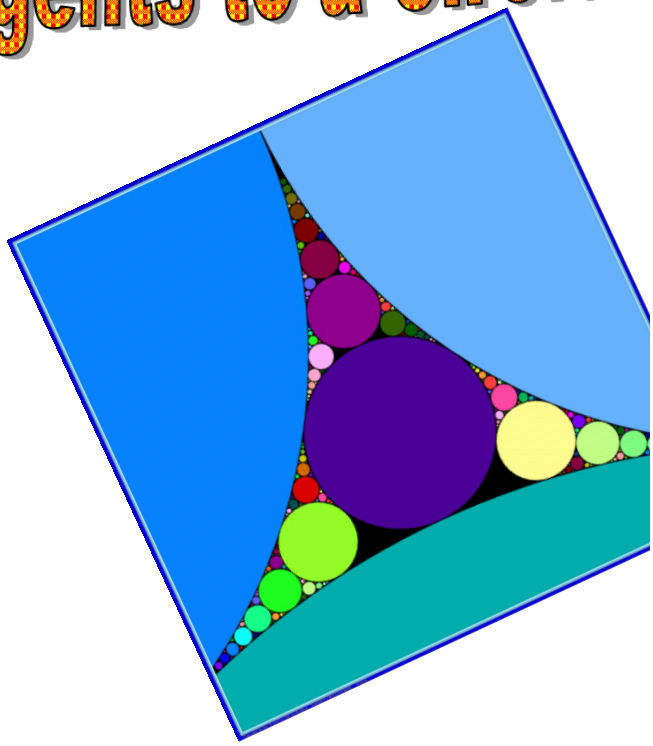
Section 8.1

Properties of Tangents to a Circle

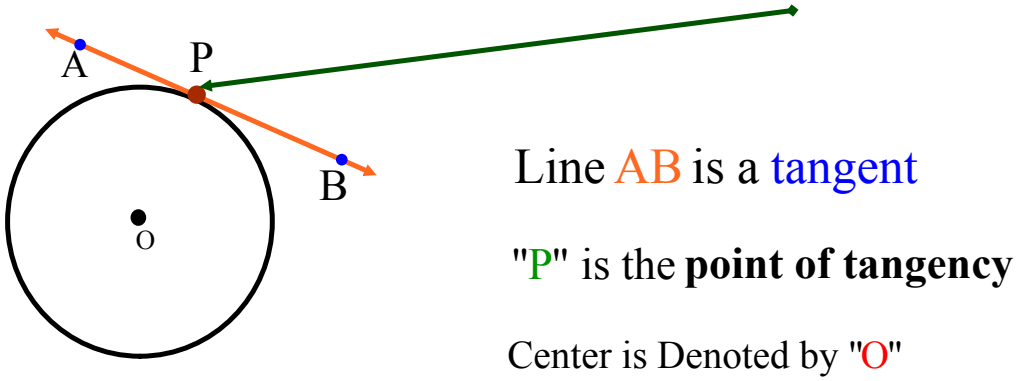




Tangent Properties

- **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

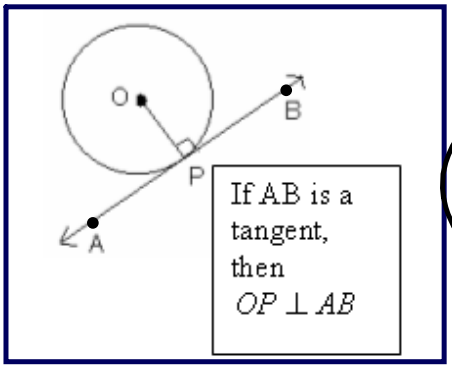
"P" is the **point of tangency**

Center is Denoted by "O"

Tangent Property 1:

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

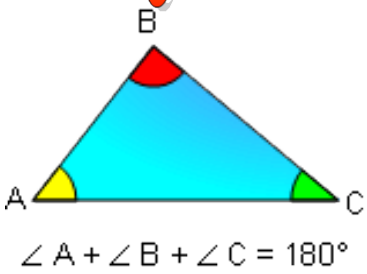
(3)



"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

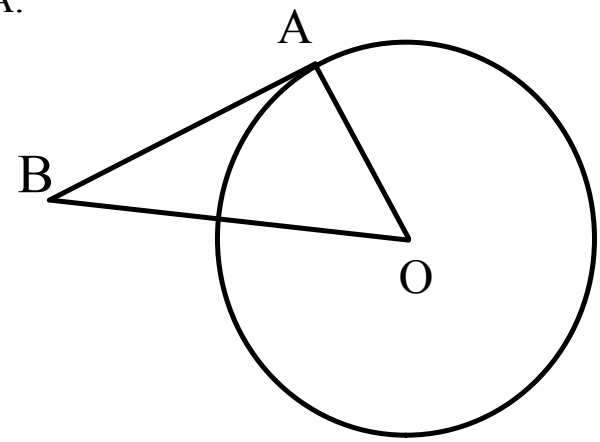
Remember: Angles in a triangle add up to 180°



Hint: Remember tangent property 1

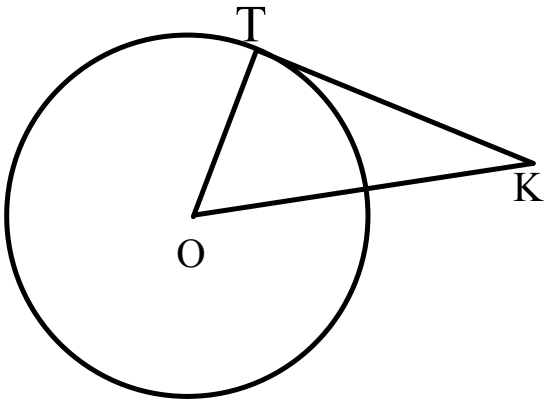
1) Point O is the centre of a circle and AB is a Tangent to the circle. In ΔOAB, <AOB = 56°. Determine the measure of <OBA.

(Show all Work)



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) **Hint: Remember tangent property 1**



Remember:

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

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

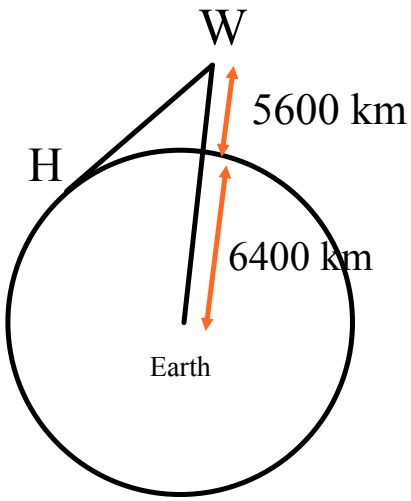
or

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

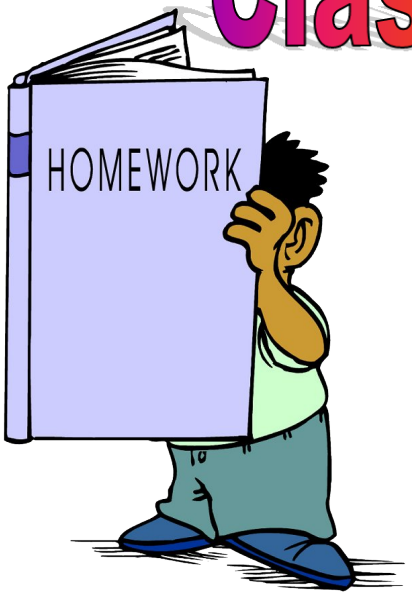
Answer:

Solving Problems Using the Tangent and Radius Property

An airplane, W, is cruising at an altitude of 5600km. 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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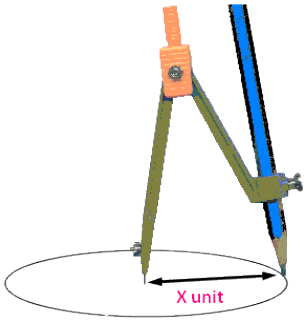
Day 1

3 ab
4a
5abc sketch
6abc sketch
7ab sketch



Attachments

Section 8.1 Sticky Note Activity.docx