8.1 Properties of Tangents to a Circle

Dec. 6, 2018

May 19, 2015

May 6, 2019

Mini Lesson #1:

TASK 1, 2, 3

Handouts on the back table...you will need a ruler!

Visualize the red spoke extended to the ground.
What angle does the spoke appear to make with the ground?

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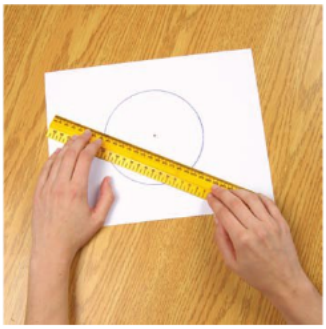
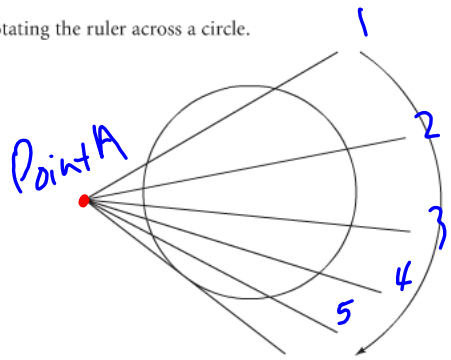
Connect

Imagine fixing one end of a ruler and rotating the ruler across a circle.

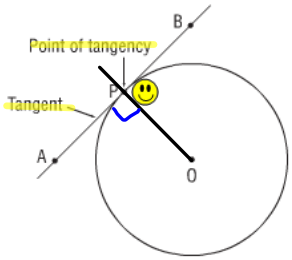


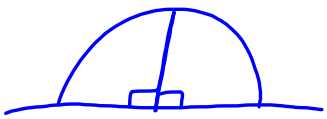


As one edge of the ruler sweeps across the circle, it intersects the circle at 2 points.
Just as the ruler leaves the circle, it intersects the circle at 1 point.
The edge of the ruler is then a tangent to the circle.

A line that intersects a circle at only one point is a **tangent** to the circle.
The point where the tangent intersects the circle is the **point of tangency**.

Line AB is a tangent to the circle with centre O.
Point P is the point of tangency.





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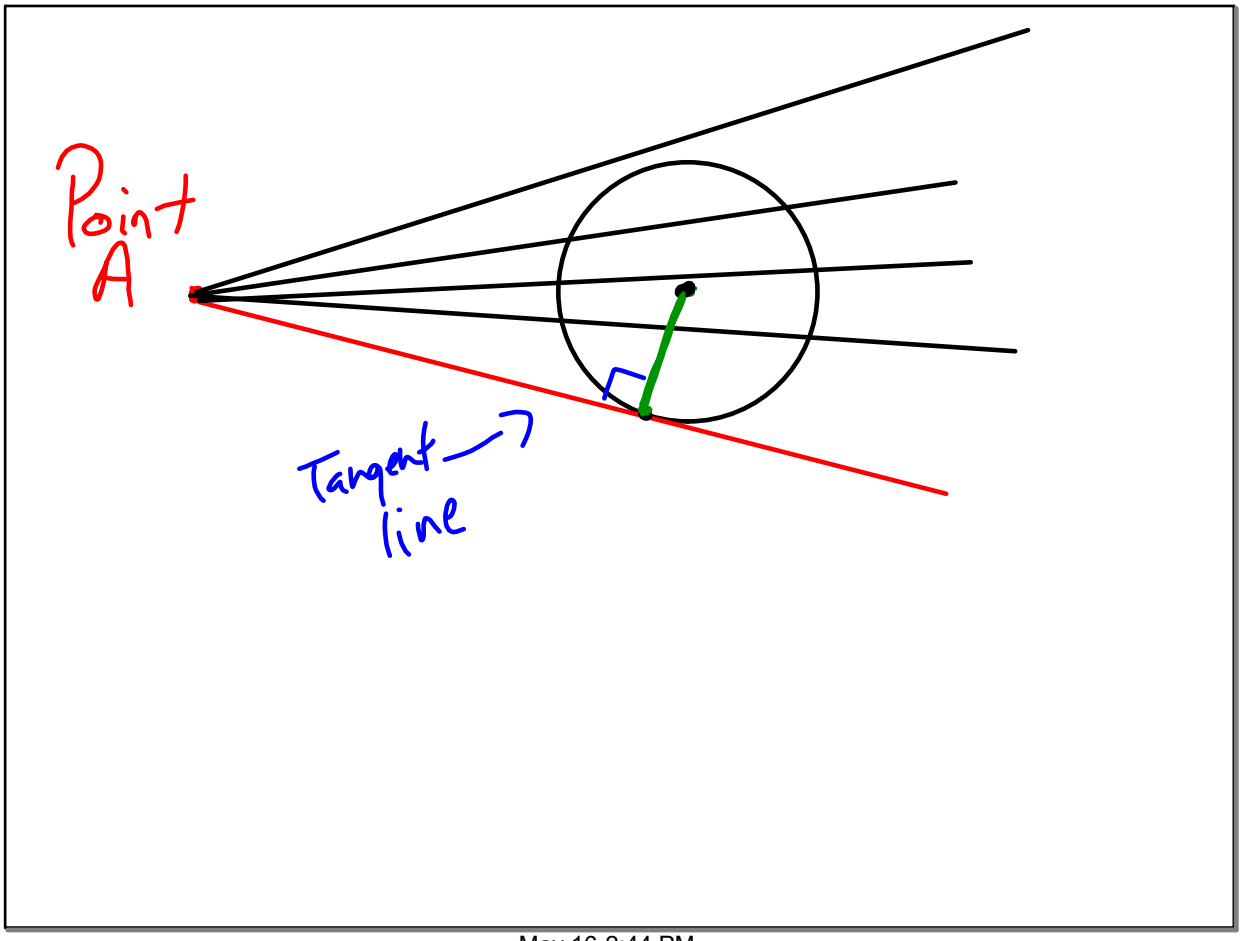

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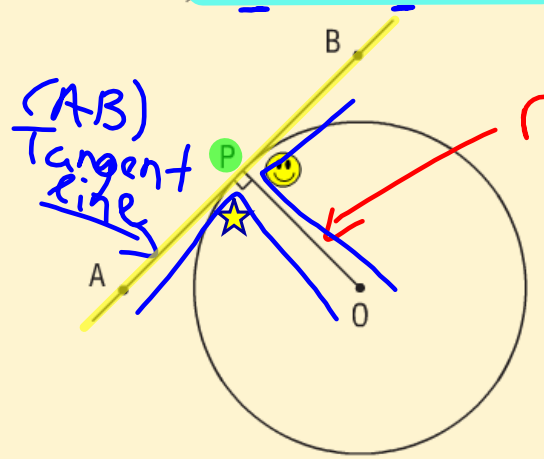
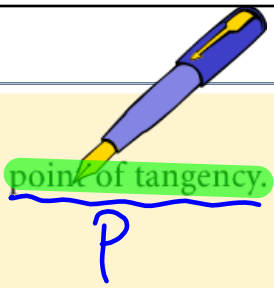
Tangent-Radius Property

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

That is, $\angle APO = \angle BPO = 90°$





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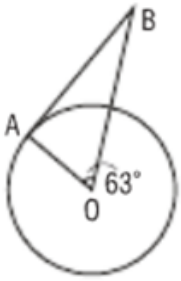
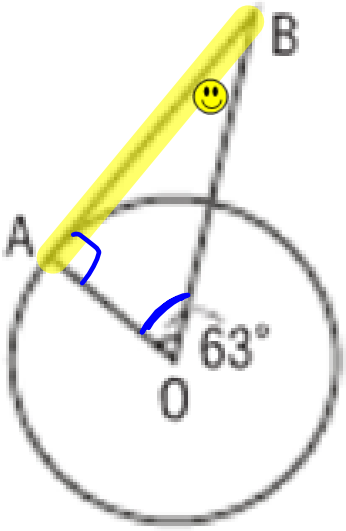
Example 1 **Determining the Measure of an Angle in a Triangle**

Point O is the centre of a circle and AB is a tangent to the circle.
In ΔOAB, $\angle AOB = 63°$
Determine the measure of $\angle OBA$.





$90 + 63 + 27 = 180$

153 $180 - 153$

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