**Supplementary Activity**

**Unit 5 Investigation 4**

Open the file: <http://tube.geogebra.org/material/simple/id/1478395>

Definition: A line is said to be **tangent** to a circle if and only if it intersects the circle in exactly one point. In the applet below, the tangent lines are drawn in purple. Points E and D are said to be points of **tangency**.

Construct radius $\overbar{AE}$ and radius $\overbar{AD}$.

1. Find the measures of $∠$*CEA* and $∠$*ADC*.

2. Move point *C* around. What do you notice about the two angle measures you obtained in step (1)?

3. Fill in the blanks: **If a line is drawn tangent to a circle, then that line is always(\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_) to the (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_) of that circle drawn to the point of (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_).**

Click on the red "Show Segments Tangent to Circle" icon.

4. Measure the lengths *CE* and *CD*. What do you notice?

5. Move point *C* around. What do you notice about the lengths of the 2 tangent segments you obtained in (5) above?

6. Complete this sentence: **Tangent segments drawn to a circle from a point outside the circle are\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**