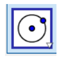
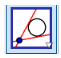
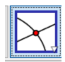
Tangent Segments to a Circle Investigation Geometry Mrs. Ledford

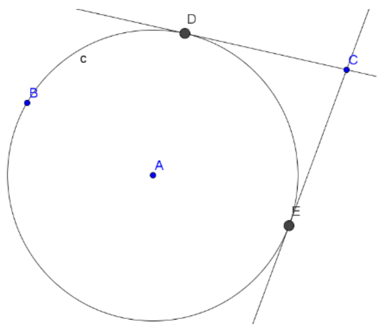
Step 1: Open Geogebra and hide the axes with the  button.

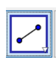
Step 2: Use the circle button  to create circle c with center A and point B on the circle. (It does not matter where the points are, or what size your circle is.)

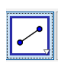
Step 3: Use the point button  to make point C outside of the circle (anywhere).

Step 4: Use the tangent button  to create 2 tangent lines from point C to the circle.

Step 5: Use the intersect button  to create point D and E which intersect with the tangent line and the circle.



Step 6: Use the segment button  to create a segment between C and D (this will be on top of the line already there.)

Step 7: Use the segment button  to create a segment from C to E (again on top of the line already there.)

Step 8: Steps 6 and 7 created the segments h and i, look in the Algebra pane and check the lengths of these two segments.

What do you notice about their lengths? _________________________________

Click and hold any of the points A, B, or C. What do you notice about segments h and i now?

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Compare your results with the results of others near you. Your next conjecture could be:

Tangent segments to a circle from a point outside the circle are _________________