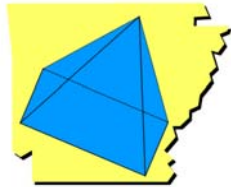


GEOMETRY AT ITS BEST



“The Tale of Two Tangents”

Created by Michelle Bonds

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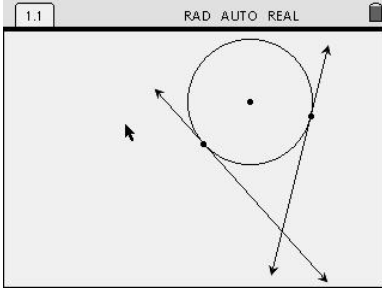
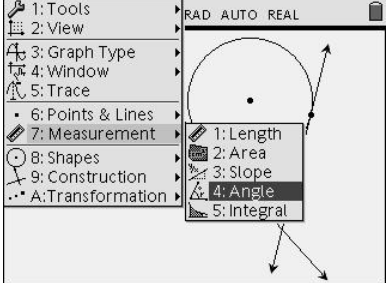
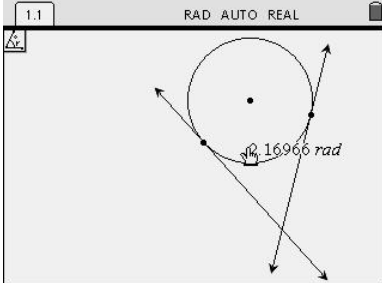
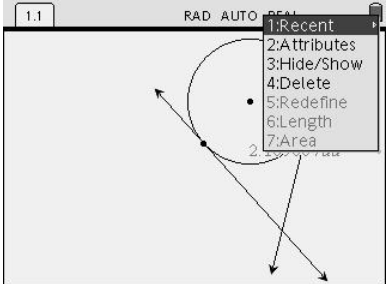
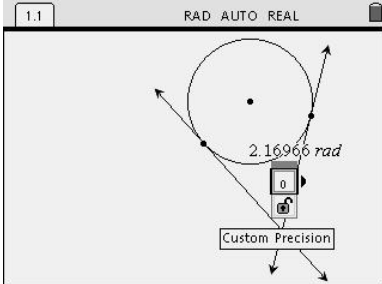
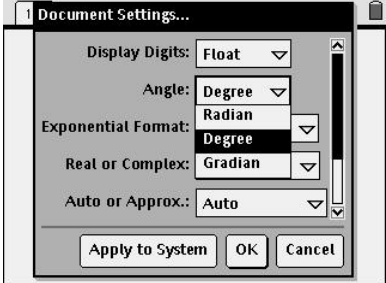
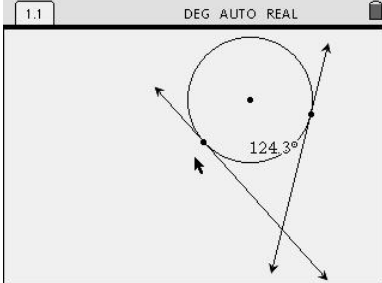
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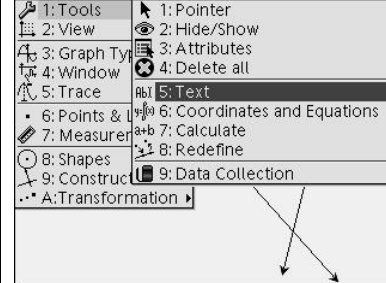
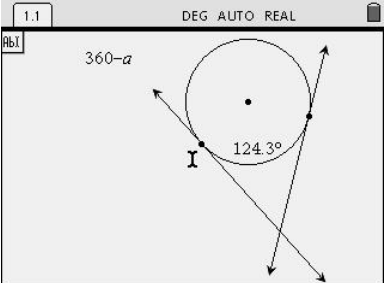
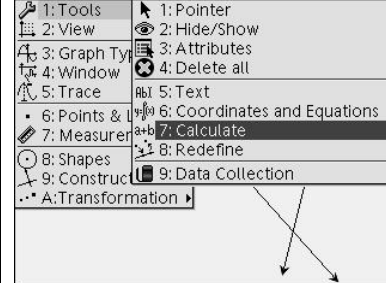
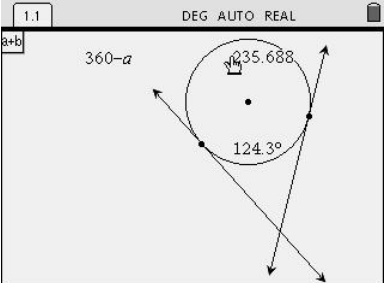
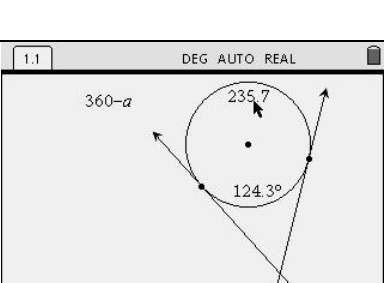
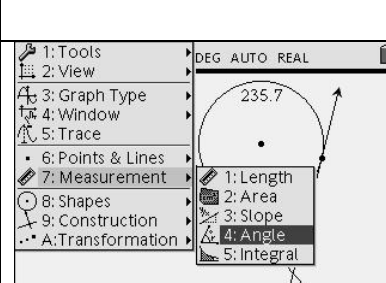
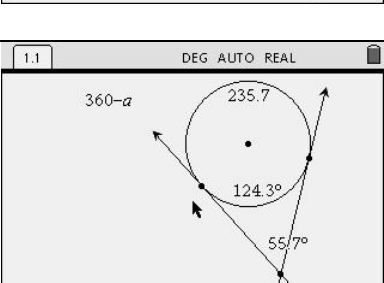
This activity allows students to investigate the relationship between the angle formed by two tangents to a circle and the arcs they intercept.

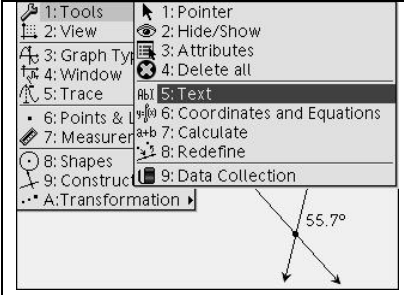
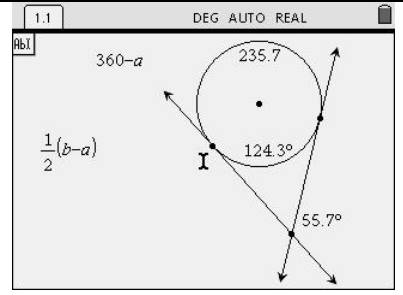
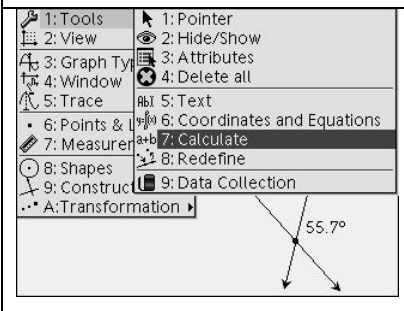
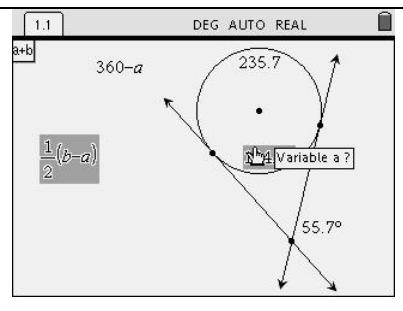
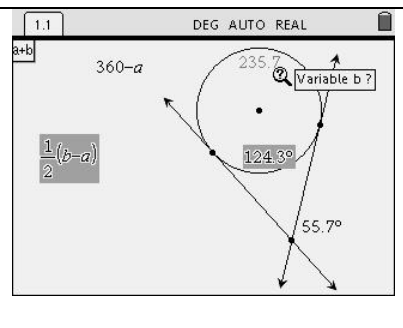
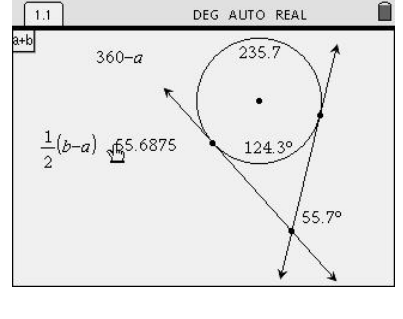
Not responsible for misspelled words, mathematical mistakes, or anything else you might not like.

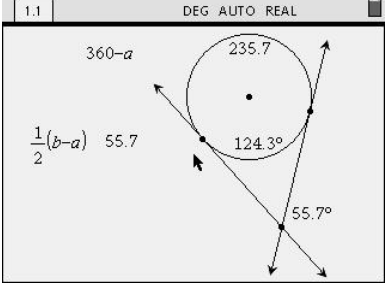
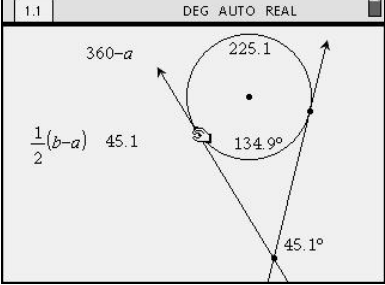
	<p>Create a point in a new Geometry page</p>	
	<p>Create a line through the point.</p>	
	<p>Create a point on the line.</p>	
	<p>Create a perpendicular line through the point.</p>	

	<p>Create a circle using the two points.</p>	
	<p>Hide the two lines.</p>	
	<p>Create two separate tangent lines to the circle.</p>	
	<p>Extend the two tangent lines until they intersect.</p>	

	<p>Hide the original point that is on the circle.</p>	
	<p>Measure the minor arc by measuring the central angle and place the measure close to the arc.</p>	
	<p>Change the accuracy to tenths place by clicking on the measure and pressing $\text{ctrl} + \text{menu} + 2$. Then use the \leftarrow and \rightarrow to adjust the number of decimal places.</p>	
	<p>Change the document settings from radians to degrees by pressing $\text{ctrl} + \text{menu} + \text{u}$ then clicking on System Info.</p>	

	<p>Create the text $360-a$. Place the text in the upper left corner of the screen.</p>	
	<p>Calculate the measure of the major arc by using $\text{menu} + 7$. Next click the text then the measure of the minor arc for variable a. Place the new measurement at the top of the circle for the major arc.</p>	
	<p>Change the accuracy to the tenths place.</p>	
	<p>Measure the angle formed by the two tangents, and place the measurement next to the angle.</p>	

	<p>Create the text $\frac{1}{2}(b-a)$ and place it to the left of the screen.</p>	
	<p>Evaluate the expression by using the Calculate function. Click on the text.</p>	
	<p>Click on the minor arc measure again as a and the major arc measure as b.</p>	
	<p>Place the calculation next to the text.</p>	

	<p>Change the accuracy of the calculation to the tenths place.</p> <p>What do you notice about the calculation and the measure of the angle formed by the tangents?</p>	
	<p>Move either of the tangent points along the circle.</p> <p>What happens to the measure? Does the expression and the angle measure always stay the same?</p>	

Notes:

