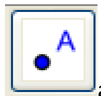
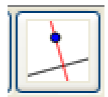
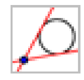
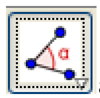
3.5 Secants and Tangents

Today you will use this sheet to complete problems 5 and 6 from page 197. Write all of your responses on here. On Thursday we will spend more class time discussing problems 8-10 on page 202.

Log onto the computers and open Geogebra. In the input bar, type the equation x^2

1. Select the point tool  and place a point anywhere on your graph of y = x^2
2. To construct a tangent at this point, choose the  tool and select  Tangents.
3. Click on the point and then on the graph to construct the tangent line.
4. To view the slope, choose the  and select the slope option. Click on the tangent line and it will label the slope.
5. To determine the slope at the points listed below, move the point to the specified input. To obtain the larger values, look for a pattern.

x	$y = x^2$	Slope of the tangent at (x, x^2)
-1		
0		
1		
2		
3		
4		
10		
100		

WHAT IS THE PATTERN? How would you find the slope at the input of x = 200?

Using one of the methods that we discussed yesterday, <u>determine the equation of the line tangent</u> to the graph $f(x) = x^3 - 7x^2 + 3x - 2$ at the point (0,-2). Show all your work below. Then type the equation into Geogebra and use the procedures from above to check your answer.