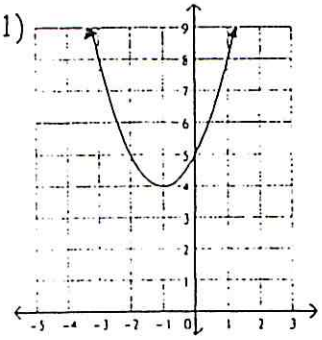
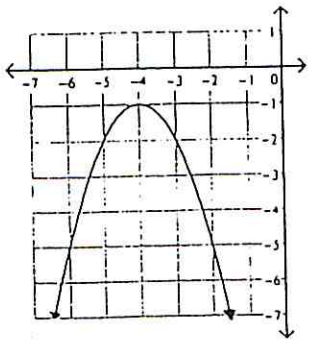
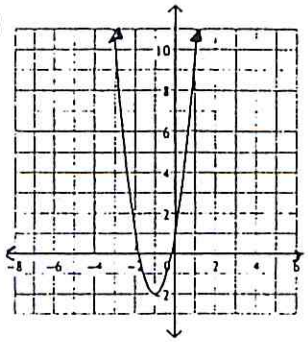
10-1 Exploring Quadratic Graphs
Algebra 1

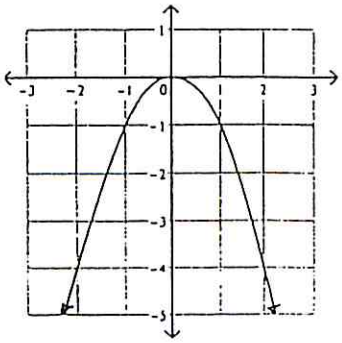
Name _____
Date _____ Hour _____

Identify the vertex of each graph. Tell whether it is a minimum or a maximum.

1) 

2) 

3) 

4) 

5) Use the graphing calculator to graph each of the equations below. Then sketch each graph on graph paper. Label each vertex.

a) $y = x^2$ b) $y = 2x^2$ c) $y = -2x^2$ d) $y = \frac{1}{2}x^2$

6) What is the shape of each graph in #5?

7) Which graph is widest? Which graph is narrowest?

8) Fill in the table below for the first four equations.

Equation	Does the curve open up or down?	Vertex	Is the vertex a maximum or a minimum?
$y = x^2$			
$y = 2x^2$			
$y = -2x^2$			
$y = \frac{1}{2}x^2$			
$y = x^2 + 3$			
$y = -x^2 - 3$			

9) Use the graphing calculator to graph each of the equations below. Then sketch each graph on graph paper.

a) $y = x^2 + 3$ b) $y = -x^2 - 3$

10) Fill in the table above for the equations from #9. What happened to the vertex when a constant was added to or subtracted from the x^2 term?