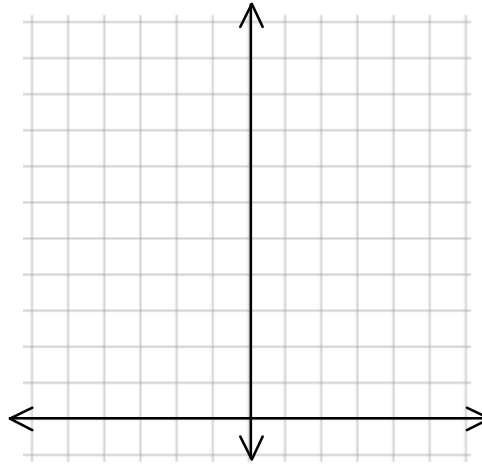


The Graph of a Quadratic Equation ($y = ax^2 + bx + c$)

1. Complete the table of values and then graph the equation $y = x^2$ on the grid below.

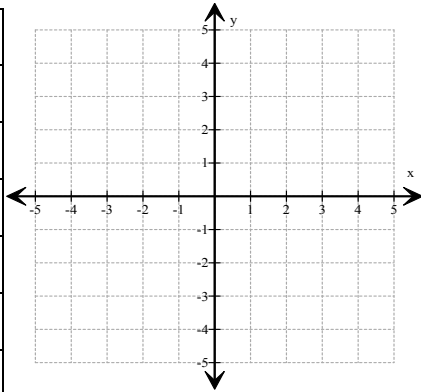
x	y
-3	
-2	
-1	
0	
1	
2	
3	



2. Use the graphing calculator to complete each table of values and then graph each equation on the accompanying set of axes.

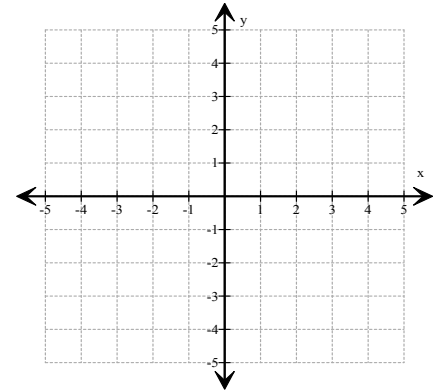
a) $y = x^2 - 2x - 3$

x	y
-2	
-1	
0	
1	
2	
3	
4	



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

x	y
-4	
-3	
-2	
-1	
0	
1	
2	



3. Describe how the graph of each equation is transformed from the graph of $y = x^2$

a) $y = x^2 - 5$

b) $y = (x - 5)^2$

c) $y = (x + 4)^2 - 6$

d) $y = 3x^2$

e) $y = \frac{1}{3}(x + 1)^2$

f) $y = -2(x - 3)^2 + 7$

4. Write a quadratic equation in vertex form for the graph that is transformed from the graph of $y = x^2$ as described.

a) shifted 1 unit to the right and 5 units down

b) shifted 4 units to the left, 9 units up, and is compressed vertically by a factor of $\frac{1}{2}$

5. Write an equation of a parabola with a turning point at (3, 4) and that opens downward.