

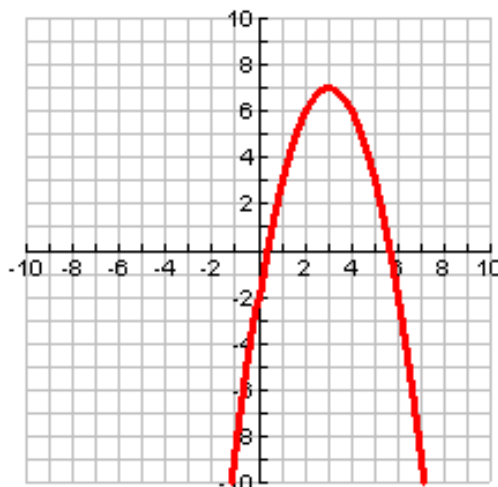
Characteristics of Quadratic Functions (pp. 2 of 5) **KEY**

Sample Problems

Find the characteristic parts of each function. Use this information to produce the graph.

A) $y = -x^2 + 6x - 2$

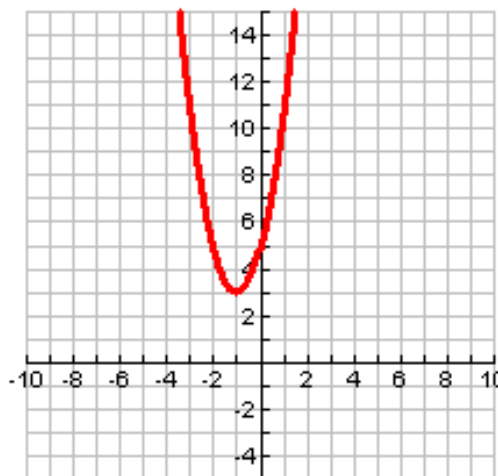
Characteristic	Value
Vertex	$(3, 7)$ Max
Axis of Symmetry	$x = 3$
y-intercept	$(0, -2)$
Point symmetric to y-intercept	$(6, -2)$
x-intercept(s)	$(0.35, 0)$ $(5.65, 0)$



x	y
0	-2
1	3
2	6
3	7
4	6
5	3
6	-2

B) $f(x) = 2(x+1)^2 + 3$

Characteristic	Value
Vertex	$(-1, 3)$ Min
Axis of Symmetry	$x = -1$
y-intercept	$(0, 5)$
Point symmetric to y-intercept	$(-2, 5)$
x-intercept(s)	None



x	y
-4	21
-2	11
-2	5
-1	3
0	5
1	11
2	21

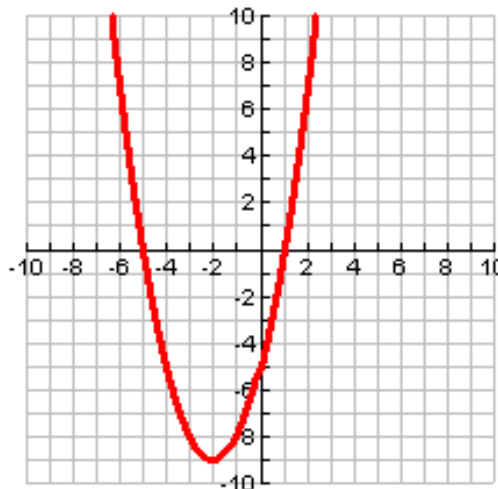
Characteristics of Quadratic Functions (pp. 3 of 5) **KEY**

Practice Problems

For problems #1-4 make a table of values, graph the function, find the vertex, determine if the vertex is a maximum or minimum, write the equation of the line for the axis of symmetry, find the y-intercept and symmetric point, and give the x-intercepts.

1) $f(x) = x^2 + 4x - 5$

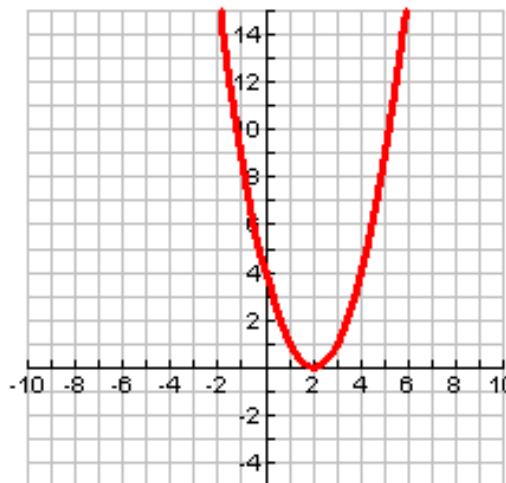
Characteristic	Value
Vertex	$(-2, -9)$ Min
Axis of Symmetry	$x = -2$
y-intercept	$(0, -5)$
Point symmetric to y-intercept	$(-4, -5)$
x-intercept(s)	$(-5, 0)$ $(1, 0)$



x	y
-4	-5
-3	-8
-2	-9
-1	-8
0	-5

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

Characteristic	Value
Vertex	$(2, 0)$ Min
Axis of Symmetry	$x = 2$
y-intercept	$(0, 4)$
Point symmetric to y-intercept	$(4, 4)$
x-intercept(s)	$(2, 0)$

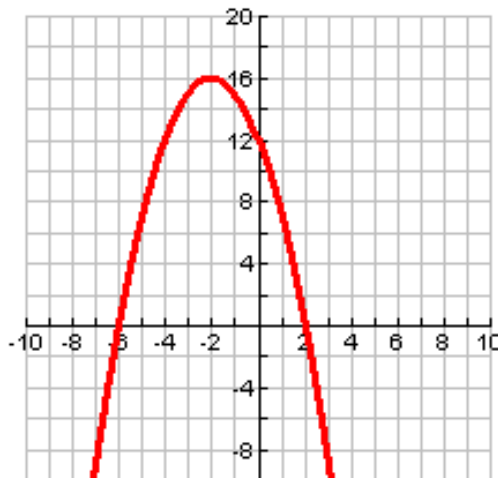


x	y
0	4
1	1
2	0
3	1
4	4

Characteristics of Quadratic Functions (pp. 4 of 5) **KEY**

3) $y = -x^2 - 4x + 12$

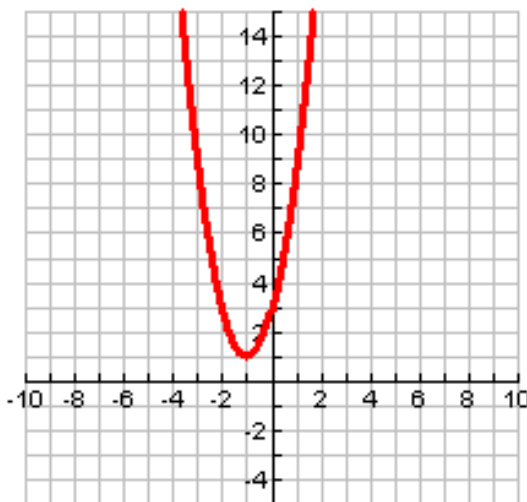
Characteristic	Value
Vertex	$(-2, 16)$ Max
Axis of Symmetry	$x = -2$
y-intercept	$(0, 12)$
Point symmetric to y-intercept	$(-4, 12)$
x-intercept(s)	$(-6, 0)$ $(2, 0)$



x	y
-4	12
-3	15
-2	16
-1	15
0	12

4) $y = 2(x+1)^2 + 1$

Characteristic	Value
Vertex	$(-1, 1)$ Min
Axis of Symmetry	$x = -1$
y-intercept	$(0, 3)$
Point symmetric to y-intercept	$(-2, 3)$
x-intercept(s)	None



x	y
-3	9
-2	3
-1	1
0	3
1	9