

VERTEX FORM #7:

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

a) Find the vertex.

$$(2, -5)$$

b) Write the equation for the axis of symmetry.

$$X = 2$$

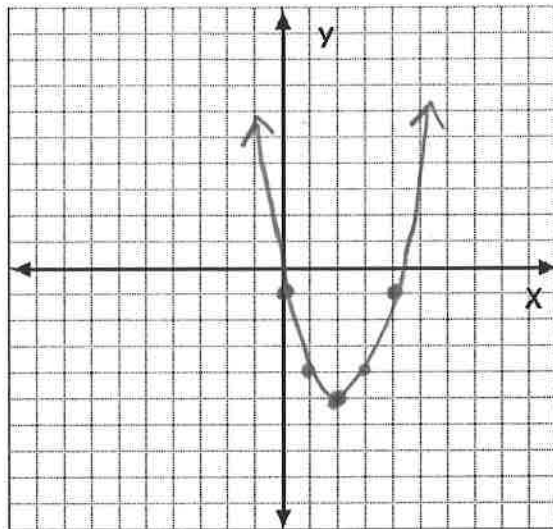
c) Complete a table of values.

X	y
0	-1
4	-1
1	-4
3	-4

d) Find the y-intercept.

$$(0, -1)$$

e) Using your graphing calculator, find the zeros.



VERTEX FORM #8:

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

a) Find the vertex.

$$(-2, 1)$$

b) Write the equation for the axis of symmetry.

$$X = -2$$

c) Complete a table of values.

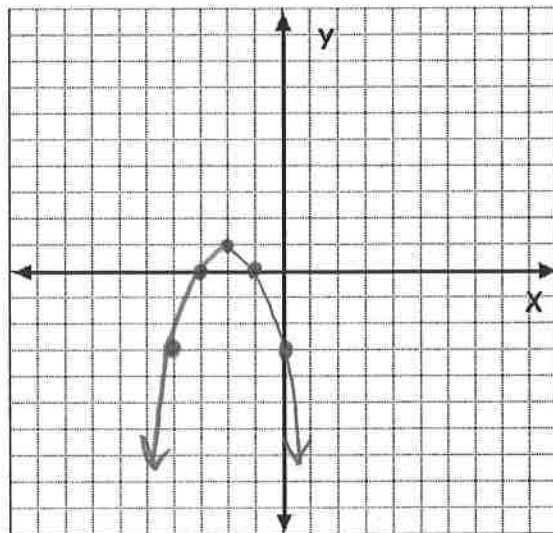
X	y
0	-3
-4	-3
-1	0
-3	0

d) Find the y-intercept.

$$(0, -3)$$

e) Using your graphing calculator, find the x-intercepts.

$$(-1, 0) \quad (-3, 0)$$



$$-(x + 2)^2 + 1 = 0$$

$$-(x + 2)^2 = -1$$

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

$$x + 2 = \pm \sqrt{1}$$

$$x = -2 \pm 1$$

$$x = -1$$

$$x = -3$$

VERTEX FORM #5:

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

$$(x - (-1))^2 + 3$$

a) Find the vertex.

$$(-1, 3)$$

b) Write the equation for the axis of symmetry.

$$x = -1$$

c) Complete a table of values.

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

d) Find the y-intercept.

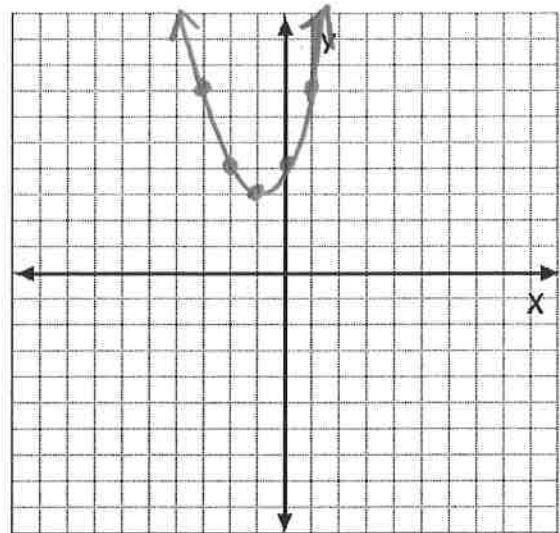
$$(0, 4)$$

e) Using your graphing calculator, find the x-intercepts.

None!

$$0 = (x+1)^2 + 3 \rightarrow \pm\sqrt{-3} = x+1$$

$$-3 = (x+1)^2 \rightarrow \boxed{-1 \pm i\sqrt{3} = x}$$



VERTEX FORM #6:

$$f(x) = (x-3)^2 - 2$$

a) Find the vertex.

$$(3, -2)$$

b) Write the equation for the axis of symmetry.

$$x = 3$$

c) Complete a table of values.

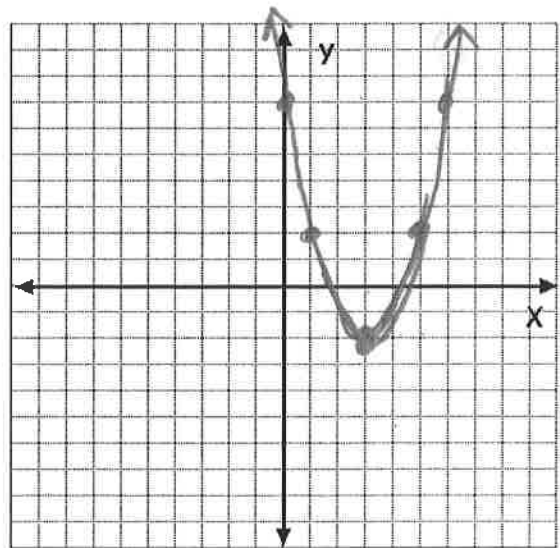
x	y
0	7
6	7
1	2
5	2

d) Find the y-intercept.

$$(0, 7)$$

e) Using your graphing calculator, find the roots.

$$(4.41, 0) (1.59, 0)$$



$$(x-3)^2 - 2 = 0$$

$$(x-3)^2 = 2$$

$$x-3 = \pm\sqrt{2}$$

$$\boxed{x = 3 \pm \sqrt{2}}$$

INTERCEPT FORM #9:

$$y = (x+2)(x-4)$$

a) Find the vertex.

$$(1, -9)$$

b) Write the equation for the axis of symmetry.

$$X = 1 \quad \frac{P+Q}{2} = \frac{-2+4}{2}$$

c) Complete a table of values.

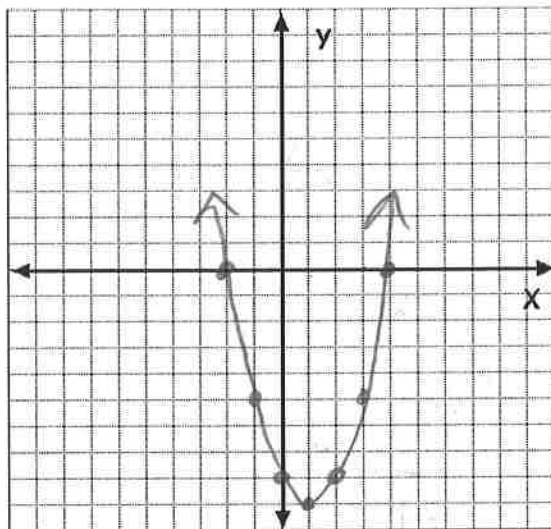
X	Y
0	-8
2	-8
3	-5
-1	-5

d) Find the y-intercept.

$$(0, -8)$$

e) Find the x-intercepts.

$$(-2, 0) \quad (4, 0)$$



INTERCEPT FORM #10:

$$f(x) = (x-3)(x-1)$$
$$x^2 - 4x + 3$$

a) Find the vertex.

$$\left(\frac{-b}{2a}, f(x)\right) \Rightarrow (2, -1)$$

b) Write the equation for the axis of symmetry.

$$X = 2$$

c) Complete a table of values.

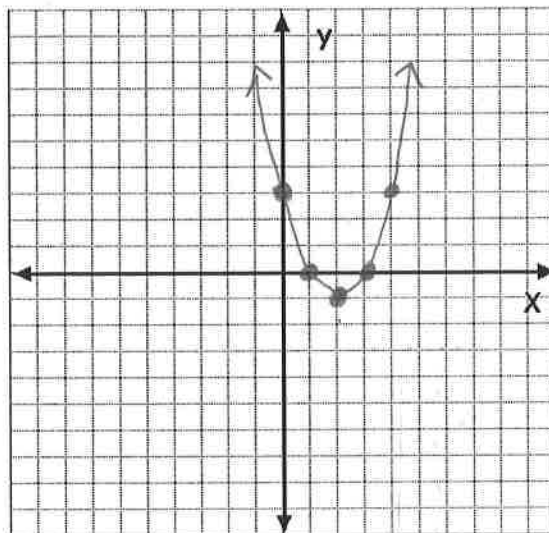
X	Y
0	3
4	3
1	0
3	0

d) Find the y-intercept.

$$(0, 3)$$

e) Find the roots.

$$\{x=3, x=1\}$$



INTERCEPT FORM #11:

$$y = -(x+5)(x-1)$$

$$-(x^2 + 4x - 5)$$

$$-x^2 - 4x + 5$$

a) Find the vertex.

$$\frac{4}{-2} = (-2, 9)$$

b) Write the equation for the axis of symmetry.

$$X = -2$$

c) Complete a table of values.

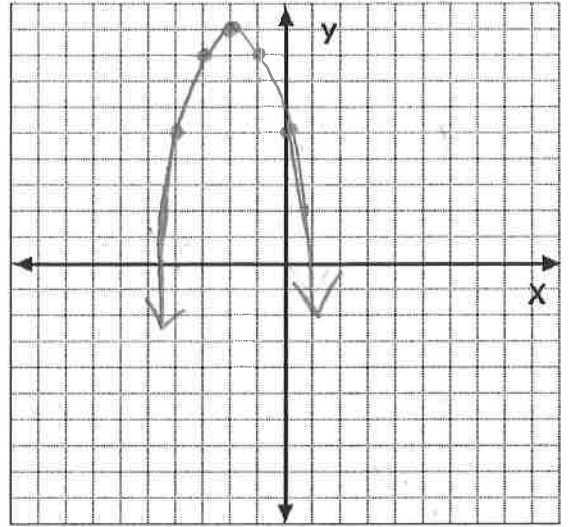
X	Y
0	5
-4	5
-1	8
-3	8

d) Find the y-intercept.

$$(0, 5)$$

e) Find the zeros.

$$X = -5 \quad X = 1$$



INTERCEPT FORM #12:

$$f(x) = (x-2)(x+2)$$

$$x^2 - 4$$

a) Find the vertex.

$$(0, -4)$$

b) Write the equation for the axis of symmetry.

$$X = 0$$

c) Complete a table of values.

X	Y
1	-3
-1	-3
2	0
-2	0

d) Find the y-intercept.

$$(0, -4)$$

e) Find the x-intercepts.

$$(2, 0) \quad (-2, 0)$$

