

NAME _____

DATE _____

GRAPH PARABOLA: Worksheet 2

Graph each quadratic function (parabola). Graph by answering the following.

1) $y = x^2 + 2x - 5$

a) Identify a , b , and c .

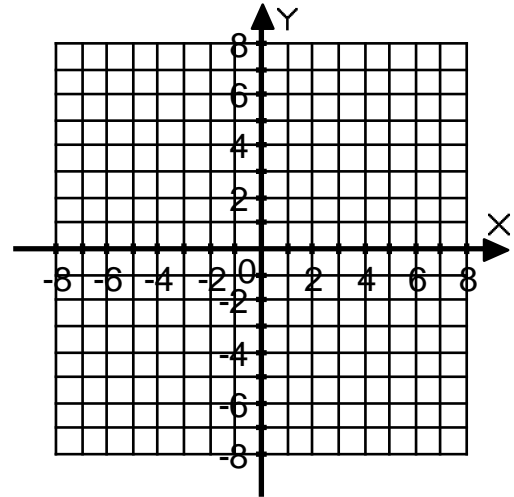
b) Find the line of symmetry:

$$x = \frac{-b}{2a}$$

c) Find the vertex.

d) Name the y -intercept.

e) Plot a point (P) symmetrical to the y -intercept. If the vertex is on the line of symmetry, find another point by substituting a new x and then find a symmetrical point.



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

a) Identify a , b , and c .

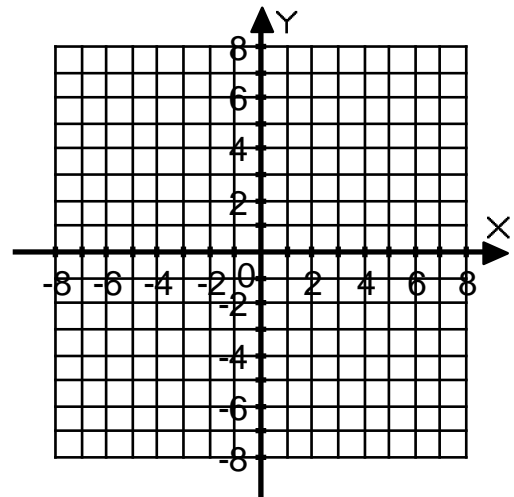
b) Find the line of symmetry:

$$x = \frac{-b}{2a}$$

c) Find the vertex.

d) Name the y -intercept.

e) Plot a point (P) symmetrical to the y -intercept. If the vertex is on the line of symmetry, find another point by substituting a new x and then find a symmetrical point.



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

a) Identify a , b , and c .

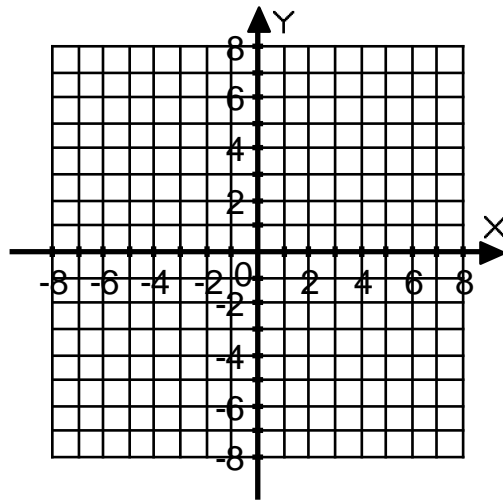
b) Find the line of symmetry:

$$x = \frac{-b}{2a}$$

c) Find the vertex.

d) Name the y -intercept.

e) Plot a point (P) symmetrical to the y -intercept.
If the vertex is on the line of symmetry, find another point by substituting a new x and then find a symmetrical point.



4) $y = \frac{1}{2}x^2 + 2x + 1$

a) Identify a , b , and c .

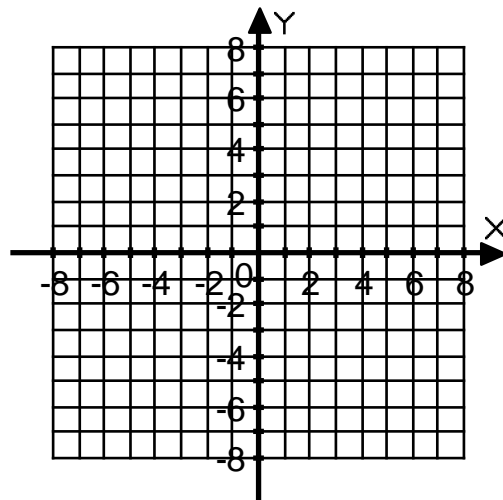
b) Find the line of symmetry:

$$x = \frac{-b}{2a}$$

c) Find the vertex.

d) Name the y -intercept.

e) Plot a point (P) symmetrical to the y -intercept.
If the vertex is on the line of symmetry, find another point by substituting a new x and then find a symmetrical point.



KEY

GRAPH PARABOLA: Worksheet 2

Graph each quadratic function (parabola). Graph by answering the following.

1) $y = x^2 + 2x - 5$

a) Identify $a, b,$ and $c.$ $a = 1, b = 2, c = -5$

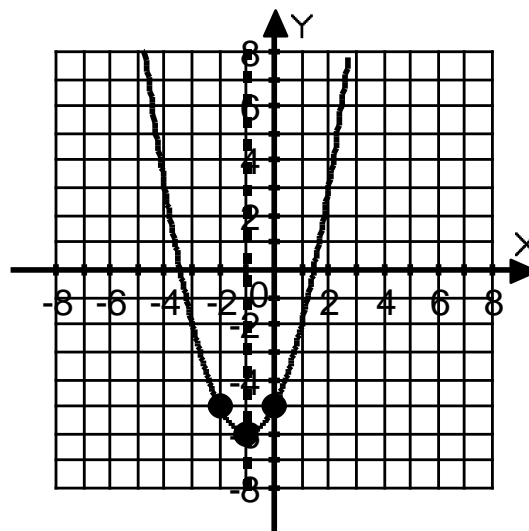
b) Find the line of symmetry:

$$x = \frac{-b}{2a} = \frac{-2}{2(1)} = -1$$

c) Find the vertex. $V(-1, -6)$

d) Name the y -intercept. -5

e) Plot a point (P) symmetrical to the y -intercept. If the vertex is on the line of symmetry, find another point by substituting a new x and then find a symmetrical point. $P(-2, -5)$



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

a) Identify $a, b,$ and $c.$ $a = 1, b = 4, c = 0$

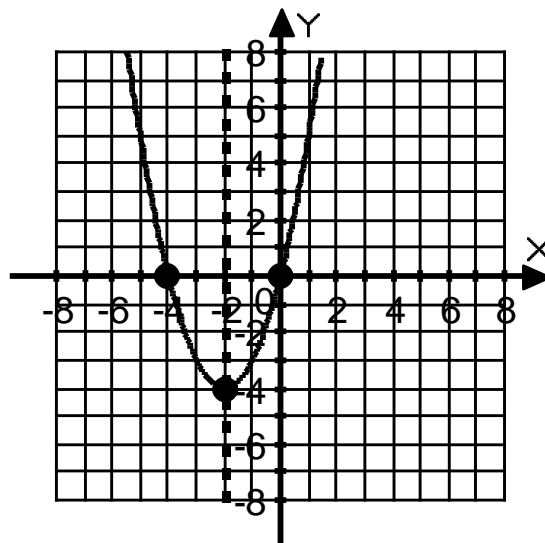
b) Find the line of symmetry:

$$x = \frac{-b}{2a} = \frac{-4}{2(1)} = -2$$

c) Find the vertex. $V(-2, -4)$

d) Name the y -intercept. 0

e) Plot a point (P) symmetrical to the y -intercept. If the vertex is on the line of symmetry, find another point by substituting a new x and then find a symmetrical point. $P(-4, 0)$



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

a) Identify a , b , and c . $a = -1, b = 4, c = -4$

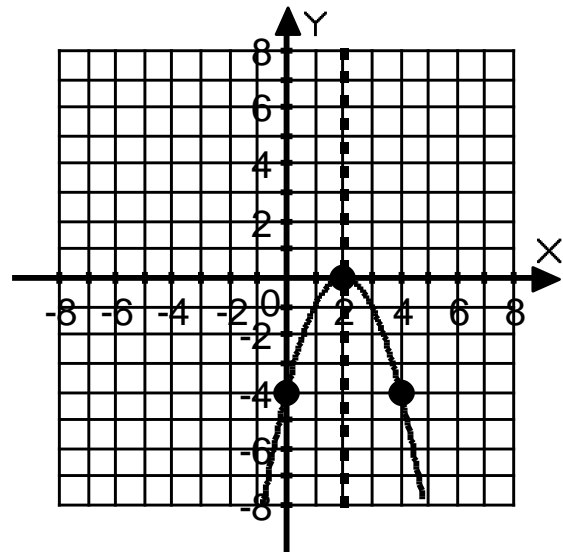
b) Find the line of symmetry:

$$x = \frac{-b}{2a} = \frac{-4}{2(-1)} = 2$$

c) Find the vertex. $V(2,0)$

d) Name the y -intercept. -4

e) Plot a point (P) symmetrical to the y -intercept. If the vertex is on the line of symmetry, find another point by substituting a new x and then find a symmetrical point. $P(4,-4)$



4) $y = \frac{1}{2}x^2 + 2x + 1$

a) Identify a , b , and c . $a = \frac{1}{2}, b = 2, c = 1$

b) Find the line of symmetry:

$$x = \frac{-b}{2a} = \frac{-2}{2(\frac{1}{2})} = -2$$

c) Find the vertex. $V(-2,1)$

d) Name the y -intercept. 1

e) Plot a point (P) symmetrical to the y -intercept. If the vertex is on the line of symmetry, find another point by substituting a new x and then find a symmetrical point. $P(-4,1)$

