

Name:

Date:

Period:

Practice Worksheet: Graphing Quadratic Functions in Intercept Form

For #1-6, label the x-intercepts, axis of symmetry, vertex, y-int., and at least one more point on the graph.

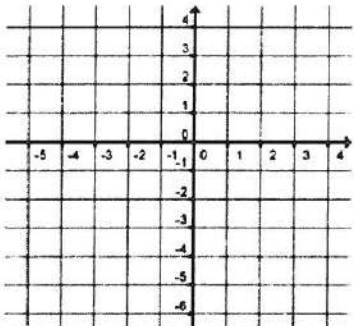
1] $y = \frac{1}{2}(x + 4)(x - 2)$

x-intercepts: (____, 0) (____, 0)

Axis of Symmetry is $x =$ _____

Vertex: (____, ____)

y-intercept: (0, ____)



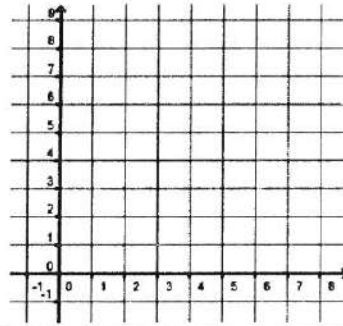
2] $y = -\frac{1}{2}x(x - 8)$

x-intercepts: (____, 0) (____, 0)

Axis of Symmetry is $x =$ _____

Vertex: (____, ____)

y-intercept: (0, ____)



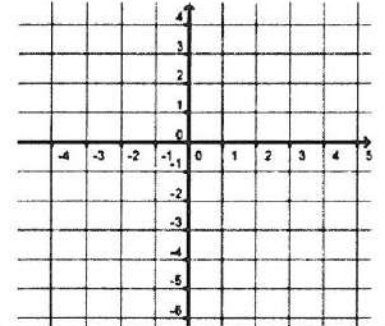
3] $y = (x + 2)(x - 2)$

x-intercepts: (____, 0) (____, 0)

Axis of Symmetry is $x =$ _____

Vertex: (____, ____)

y-intercept: (0, ____)



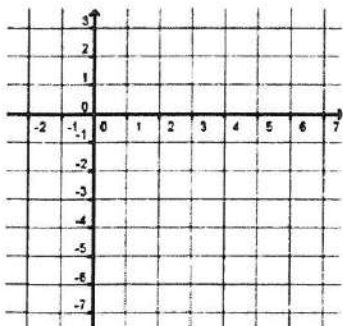
4] $y = -\frac{1}{3}(x + 1)(x - 5)$

x-intercepts: (____, 0) (____, 0)

Axis of Symmetry is $x =$ _____

Vertex: (____, ____)

y-intercept: (0, ____)



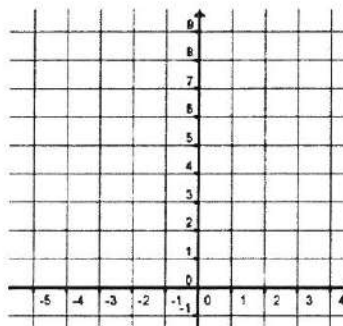
5] $y = 4(x + 2)(x + 1)$

x-intercepts: (____, 0) (____, 0)

Axis of Symmetry is $x =$ _____

Vertex: (____, ____)

y-intercept: (0, ____)



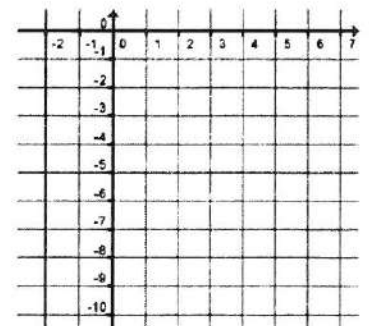
6] $y = -(x - 3)(x - 3)$

x-intercepts: (____, 0) (____, 0)

Axis of Symmetry is $x =$ _____

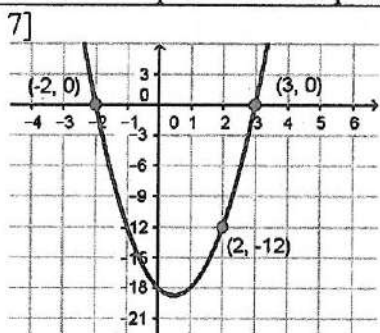
Vertex: (____, ____)

y-intercept: (0, ____)



$$y = a(x-p)(x-q)$$

Write the equation of the parabola in intercept form.



$p = -2$ $q = 3$ $x = 2$ $y = -12$

Find a. $y = a(x-p)(x-q)$

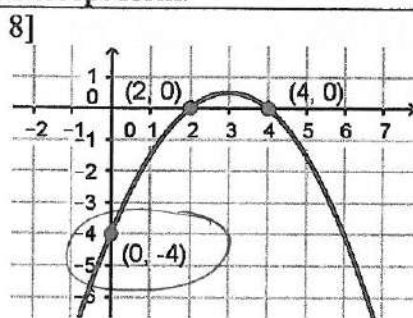
$$-12 = a(4)(-1)$$

$$-12 = -4a$$

$$a = 3$$

Write the equation.

$$y = 3(x+2)(x-3)$$



$p = 2$ $q = 4$ $x = 0$ $y = -4$

Find a. $y = a(x-p)(x-q)$

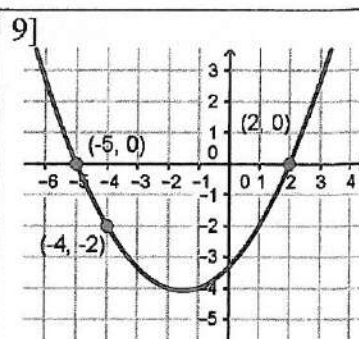
$$-4 = a(-2)(-4)$$

$$-4 = 8a$$

$$a = -\frac{1}{2}$$

Write the equation.

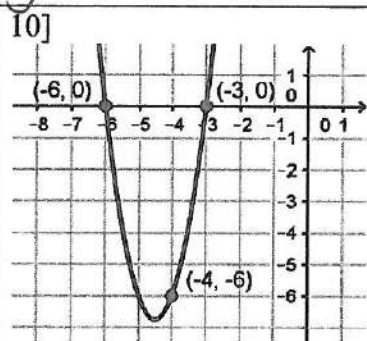
$$y = -\frac{1}{2}(x-2)(x-4)$$



$p =$ $q =$ $x =$ $y =$

Find a.

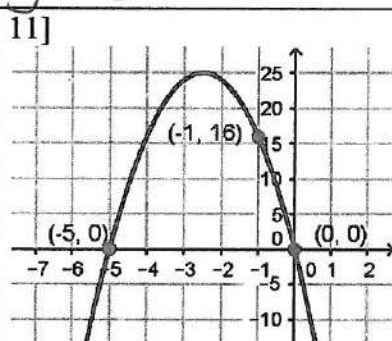
Write the equation.



$p =$ $q =$ $x =$ $y =$

Find a.

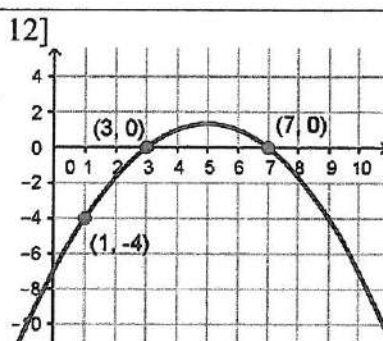
Write the equation.



$p =$ $q =$ $x =$ $y =$

Find a.

Write the equation.



$p =$ $q =$ $x =$ $y =$

Find a.

Write the equation.

Write the quadratic function in standard form.

13] $y = \frac{1}{2}(x+4)(x-2)$

14] $y = -(x-1)(x-1)$

15] $y = 3(x+3)(x+1)$

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Practice Worksheet: Graphing Quadratic Functions in Intercept Form

For #1-6, label the x-intercepts, axis of symmetry, vertex, y-int., and at least one more point on the graph.

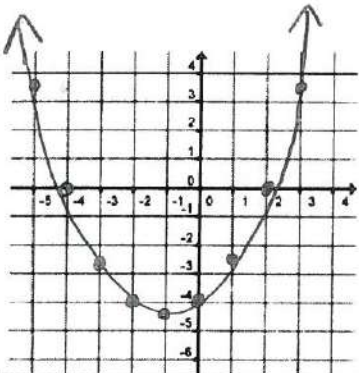
1] $y = \frac{1}{2}(x + 4)(x - 2)$

x-intercepts: $(-4, 0)$ $(2, 0)$

Axis of Symmetry is $x = -1$

Vertex: $(-1, -4.5)$

y-intercept: $(0, -4)$



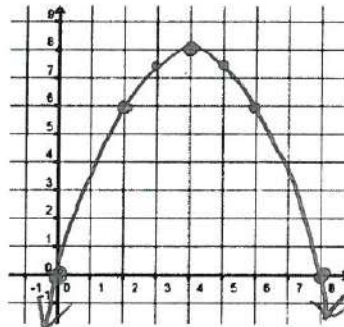
2] $y = -\frac{1}{2}x(x - 8)$

x-intercepts: $(8, 0)$ $(0, 0)$

Axis of Symmetry is $x = 4$

Vertex: $(4, 8)$

y-intercept: $(0, 0)$



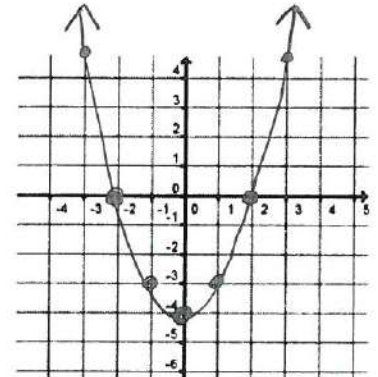
3] $y = (x + 2)(x - 2)$

x-intercepts: $(-2, 0)$ $(2, 0)$

Axis of Symmetry is $x = 0$

Vertex: $(0, -4)$

y-intercept: $(0, -4)$



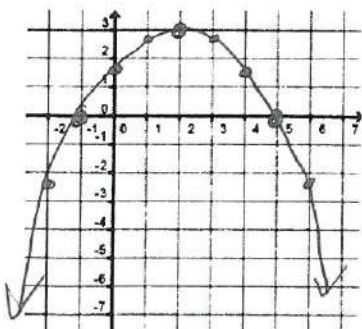
4] $y = -\frac{1}{3}(x + 1)(x - 5)$

x-intercepts: $(-1, 0)$ $(5, 0)$

Axis of Symmetry is $x = 2$

Vertex: $(2, 3)$

y-intercept: $(0, \frac{2}{3})$



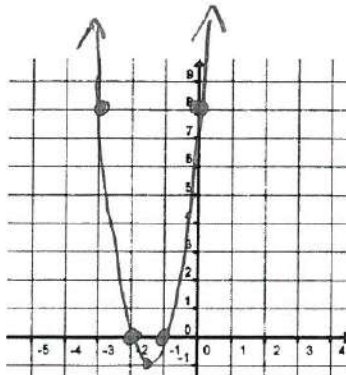
5] $y = 4(x + 2)(x + 1)$

x-intercepts: $(-2, 0)$ $(-1, 0)$

Axis of Symmetry is $x = -1.5$

Vertex: $(-1.5, 15)$

y-intercept: $(0, 8)$



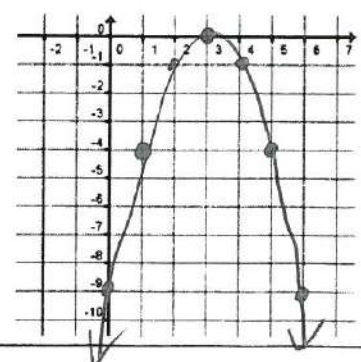
6] $y = -(x - 3)(x - 3)$

x-intercepts: $(3, 0)$ $(3, 0)$

Axis of Symmetry is $x = 3$

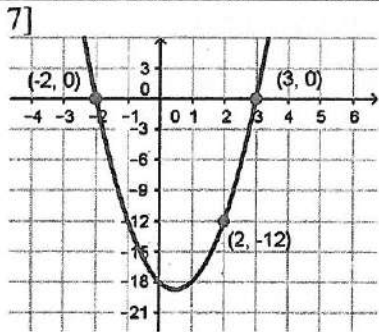
Vertex: $(3, 0)$

y-intercept: $(0, -9)$



$$y = a(x-p)(x-q)$$

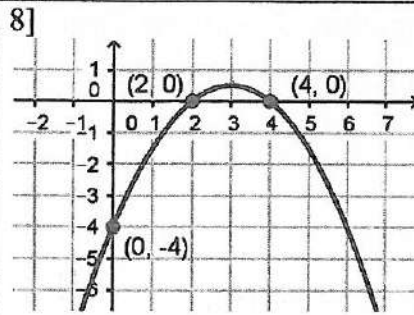
Write the equation of the parabola in intercept form.



$p = -2$ $q = 3$ $x = 2$ $y = -12$
 Find a. $-12 = a(4)(-1)$
 $-12 = -4a$
 $3 = a$

Write the equation.

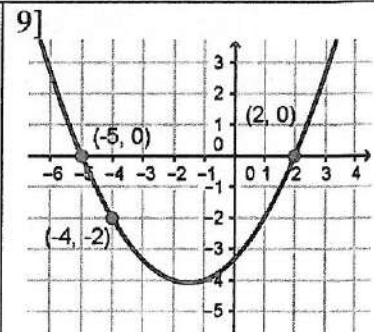
$$y = 3(x+2)(x-3)$$



$p = 2$ $q = 4$ $x = 0$ $y = -4$
 Find a. $-4 = a(-2)(-4)$
 $-4 = 8a$
 $-\frac{1}{2} = a$

Write the equation.

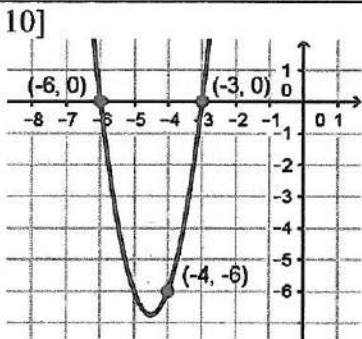
$$y = -\frac{1}{2}(x-2)(x-4)$$



$p = -5$ $q = 2$ $x = -4$ $y = -2$
 Find a. $-2 = a(1)(-6)$
 $-2 = -6a$
 $\frac{1}{3} = a$

Write the equation.

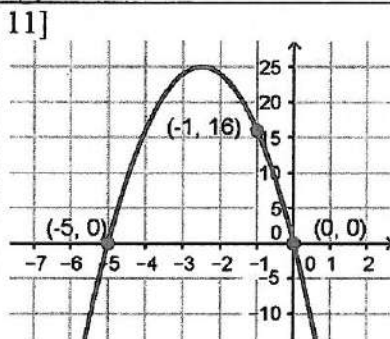
$$y = \frac{1}{3}(x+5)(x-2)$$



$p = -6$ $q = -3$ $x = -4$ $y = -6$
 Find a. $-6 = a(2)(-1)$
 $-6 = -2a$
 $3 = a$

Write the equation.

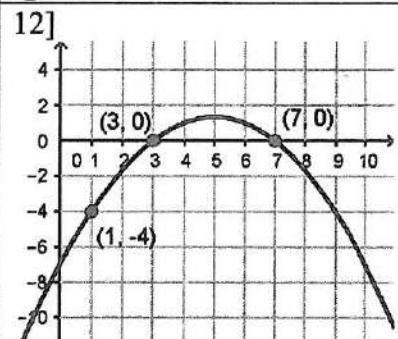
$$y = 3(x+6)(x+3)$$



$p = -5$ $q = 0$ $x = -1$ $y = 16$
 Find a. $16 = a(4)(-1)$
 $16 = -4a$
 $-4 = a$

Write the equation.

$$y = -4x(x+5)$$



$p = 3$ $q = 7$ $x = 1$ $y = -4$
 Find a. $-4 = a(-2)(-6)$
 $-4 = 12a$
 $-\frac{1}{3} = a$

Write the equation.

$$y = -\frac{1}{3}(x-3)(x-7)$$

Write the quadratic function in standard form.

13] $y = \frac{1}{2}(x+4)(x-2)$

$$y = \frac{1}{2}(x^2 + 2x - 8)$$

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

14] $y = -(x-1)(x-1)$

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

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

15] $y = 3(x+3)(x+1)$

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

$$y = 3x^2 + 12x + 9$$