Algebra 1
Day 7 – Graphing in Intercept Form

Unit [illegible]atic Functions

Practice

Name: Key

Practice Assignment

Date: _____ **Block:** _____

Review - Factor the following quadratic equations:

a. $y = x^2 + x - 30$

$y = (x+6)(x-5)$

b. $y = x^2 - 100$

$y = (x+10)(x-10)$

Find the x-intercepts and vertex of the following:

c. $y = (x+7)(x-3)$

x-int: $(-7,0)(3,0)$

vertex: $x = \frac{-7+3}{2} = \frac{-4}{2} = -2$

$y = (-2+7)(-2-3)$

$y = -2$

$(-2,-25)$

d. $y = -(x+12)(x+2)$

x-int: $(-12,0)(-2,0)$

vertex: $x = \frac{-12+-2}{2} = \frac{-14}{2} = -7$

$y = -(-7+12)(-7+2)$

$y = 25$

$(-7,25)$

Graph the following quadratic functions. Show how you calculated the vertex.

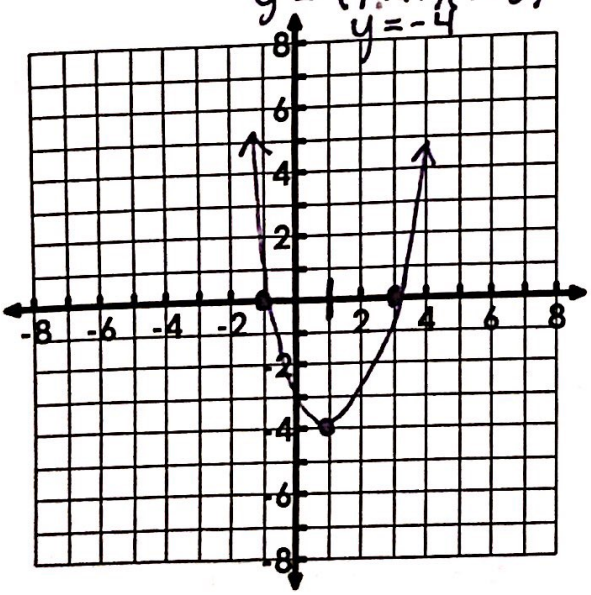
1. $y = (x+1)(x-3)$

x-int: $(-1,0)$ $(3,0)$

Vertex: $(1, -4)$

$y = (1+1)(1-3)$

$y = -4$



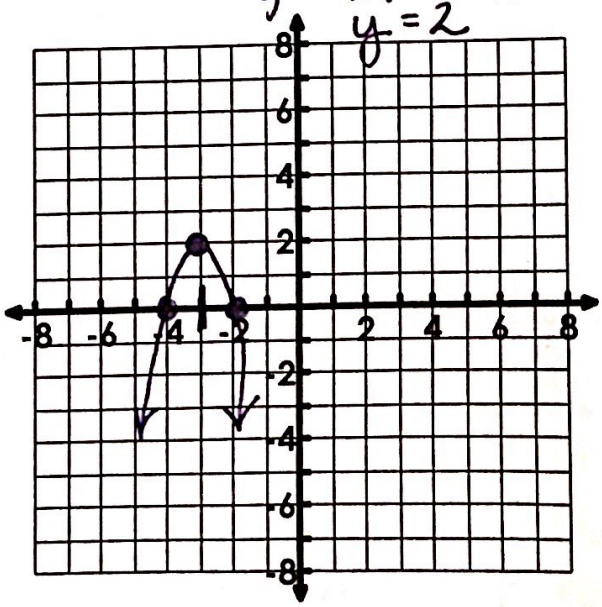
2. $y = -2(x+2)(x+4)$

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

Vertex $(-3,2)$

$y = -2(-3+2)(-3+4)$

$y = 2$



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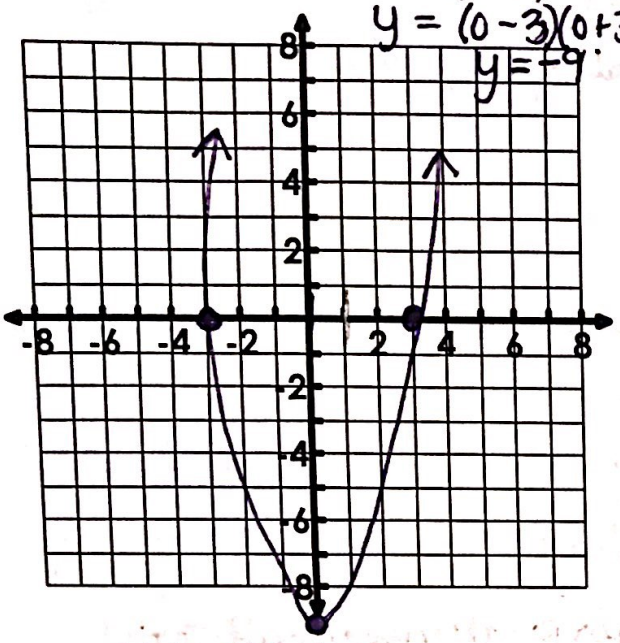
3. $y = (x - 3)(x + 3)$

X-int: (3,0) (-3,0)

Vertex (0,-9)

$y = (0-3)(0+3)$

$y = -9$



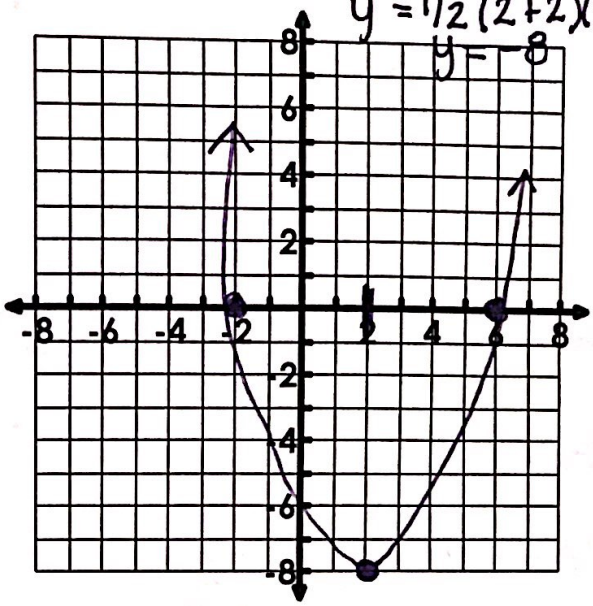
4. $y = \frac{1}{2}(x + 2)(x - 6)$

x-int: (-2,0) (6,0)

Vertex: (2,)

$y = 1/2(2+2)(2-6)$

$y = -8$



Write an equation for the following descriptions or graphs in intercept (factored) form. Assume there are no stretches or shrinks with each graph.

a = −

5. Write a quadratic function that represents a parabola that opens down and has x-intercepts of (-2, 0) & (5,0).

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

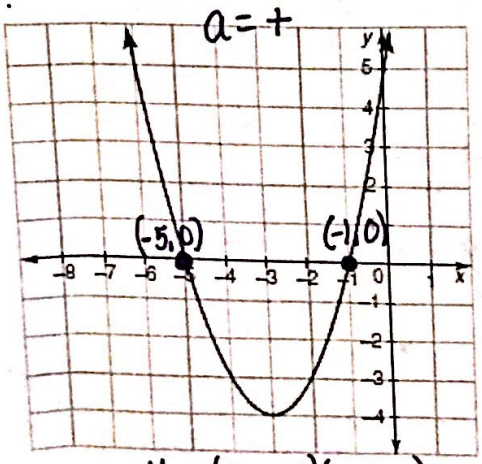
a = +

6. Write a quadratic function that represents a parabola that opens up and has x-intercepts of (3, 0) and (7, 0).

$y = (x-3)(x-7)$

7.

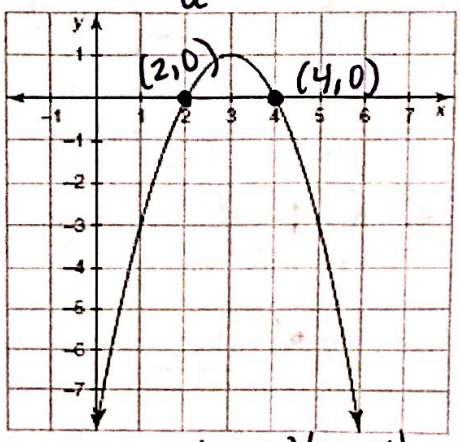
a = +



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

8.

a = −



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

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