

W-AZ Algebra 2 Week 22

$$f(x) = ax^2 + bx + c$$

$$a = 1 \quad b = -4 \quad c = 1$$

line of symmetry

$$\text{vertex: } (2, -3) \quad x=2$$

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

y-int

$$\text{vertex: } \left(\frac{-b}{2a}, f\left(\frac{-b}{2a}\right) \right)$$

solve for this

input here

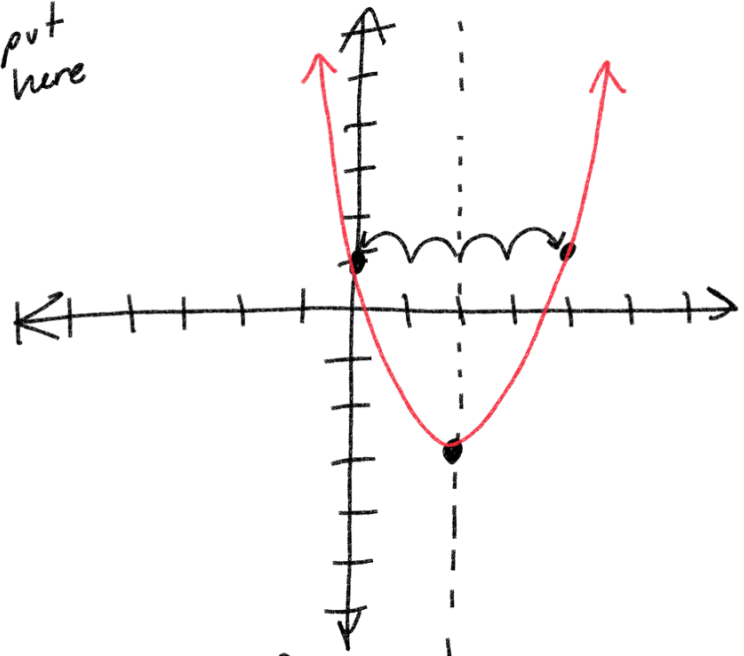
$$x = \frac{-(-4)}{2(1)} = \frac{4}{2} = 2$$

$$y = x^2 - 4x + 1$$

$$(2)^2 - 4(2) + 1$$

$$4 - 8 + 1$$

$$-4 + 1 = -3$$



$$\{ y = -3x^2 + 12x - 8 \}$$

y-int

vertex graph

$$\text{vertex } \left(\frac{-b}{2a}, f\left(\frac{-b}{2a}\right) \right) \quad (2, 4)$$

$$\frac{-b}{2a} = \frac{-(12)}{2(-3)} = \frac{-12}{-6} = 2$$

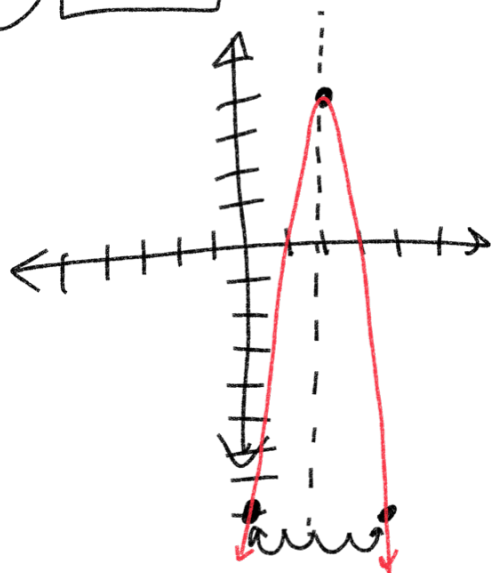
$$-3x^2 + 12x - 8$$

$$-3(2)^2 + 12(2) - 8$$

$$-3(4) + 24 - 8$$

$$-12 + 24 - 8$$

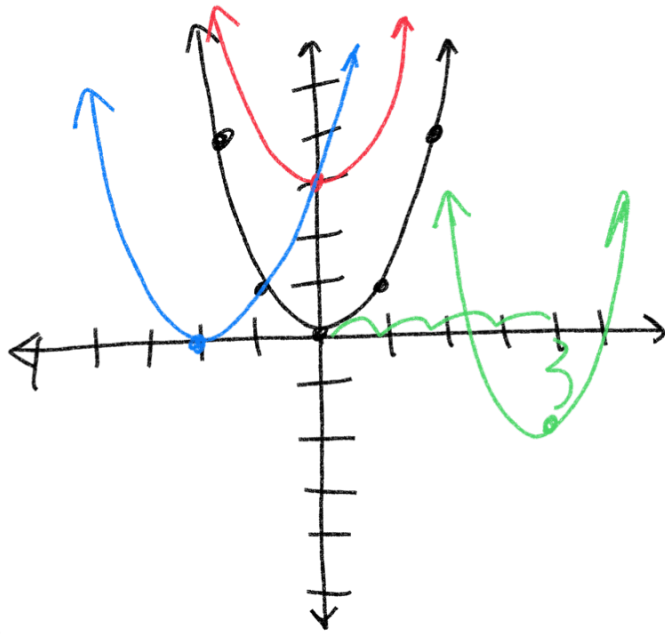
$$12 - 8 = 4$$



$$y = x^2$$

$$\{ y = x^2 + 3 \}$$

⊕ up moves
⊖ down up 3



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

opposite
left 2

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

opposite
right 4
down 2

$$y = ax^2 + bx + c$$

$a > 1$ vertical stretch
 $0 < a < 1$ horizontal stretch

Quadratic Form

Vertex Form

$$y = ax^2 + bx + c$$

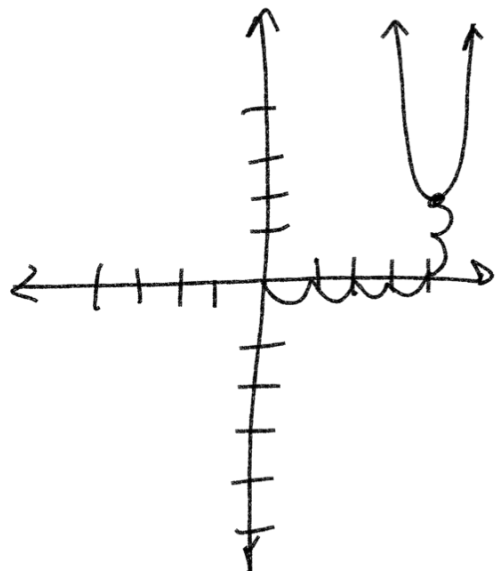
$$y = a(x - h)^2 + k$$

vertex: (h, k)

$$y = \left(\frac{3x - 12}{3} \right)^2 + 2$$

$$y = \left(3(x - 4) \right)^2 + 2$$

4 right
up 2



$$\left(\frac{2x+3}{2}\right)^2 + 2$$

$$\text{Vertex: } \left(-\frac{3}{2}, 2\right)$$

$$\left(2\left(x + \frac{3}{2}\right)\right)^2 + 2$$

$$a(x-h)^2 + k$$

vertex: (h, k)

$$-4 \div \frac{1}{2}$$

$$\downarrow \downarrow \downarrow$$

$$\frac{-4}{1} \div \frac{2}{1} = \frac{-8}{1} = -8$$

$$y = \left(\frac{1}{2}x - 4\right)^2 + 3$$

$$\frac{1}{2}(x-8)^2 + 3$$

$$\text{Vertex: } (+8, 3)$$

HW
 ch 5-3 (evens)
 Supplemental WS
 Online HW 22 } March 17th
 Quiz 22 }
 HW/Quiz 20 3/4
 HW/Quiz 21 3/10

