What you will learn about:
Graphing Reload

Intercept

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

$f(-1) = (-1-3)(-1+5)$

$(-4)(4)$

-16

Graph each quadratic. Make sure to label all key components.

$f(x) = (x-3)(x+5)$

Maximum or Minimum

Vertex (-1, -16)

y – intercept (0, -15)

AOS X = -1

Domain $(-\infty, \infty)$

x – intercepts (3, 0) (-5, 0)

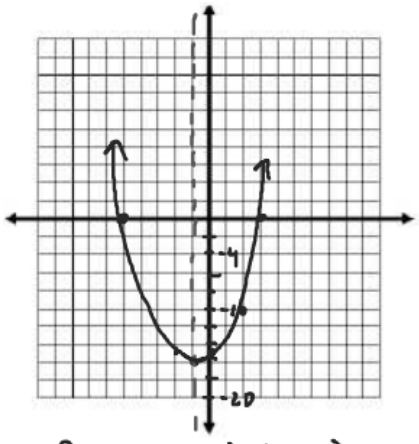
Range $[-16, \infty)$

Intervals of Increasing

$(-1, \infty)$

Intervals of Decreasing

$(-\infty, -1)$



$f(0) = (0-3)(0+5)$

$= (-3)(5)$

-15

$\frac{-5+3}{2} = \frac{-2}{2}$

$= -1$

$y = ax^2 + bx + c$

$x = \frac{-b}{2a} = \frac{-6}{2(1)} = -3$

$f(-3) = (-3)^2 + 6(-3) + 5$

$9 - 18 + 5$

Graph each quadratic. Make sure to label all key components.

$f(x) = x^2 + 6x + 5$

Maximum or Minimum

Vertex (-3, -4)

y – intercept (0, 5)

AOS X = -3

Domain $(-\infty, \infty)$

x – intercepts (-5, 0) (-1, 0)

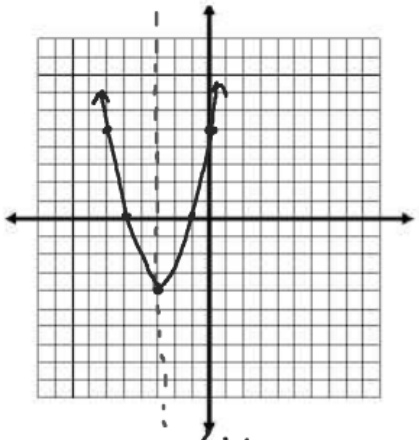
Range $[-4, \infty)$

Intervals of Increasing

$(-3, \infty)$

Intervals of Decreasing

$(-\infty, -3)$



$0 = x^2 + 6x + 5$

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

$x+5=0 \quad x+1=0$

$y=-5 \quad x=-1$

Vertex

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

Vertex (h, k)

$f(0) = 2(0+3)^2 - 10$

$2(9) - 10$

$18 - 10$

8

Standard Form

$y = ax^2 + bx + c$

- y-intercept $(0, c)$
- Vertex $x = \frac{-b}{2a}$

Find y plug $\frac{-b}{2a}$ into function.

- x-intercepts

$y = 0$

Quadratic Formula

Factor.

Graph each quadratic. Make sure to label all key components.

$f(x) = 2(x+3)^2 - 10$

Maximum or ~~Minimum~~

Vertex $(-3, -10)$

y – intercept $(0, 8)$

AOS $x = -3$

Domain $(-\infty, \infty)$

x ~~-intercepts~~

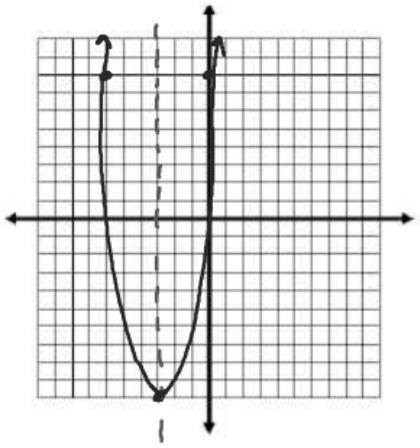
Range $[-10, \infty)$

Intervals of Increasing

$(-3, \infty)$

Intervals of Decreasing

$(-\infty, -3)$



Intercepts Form

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

- x-intercepts

$(p, 0)$ $(q, 0)$

- Vertex $x =$ Average of p and q

Find y plug x back into equation.

- y-intercept

Let $x = 0$

Vertex Form

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

- Vertex (h, k)
- x-intercepts N/A
- y-intercept

Let $x = 0$