Warm up

Label quadratic, linear or exponential. Identify the Domain and range.

$y = 7x + 4$

linear

D: $(-\infty, \infty)$

R: $(-\infty, \infty)$

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

EX.

D: $(-\infty, \infty)$

R: $(-2, \infty)$

Evaluate

$f(x) = (x + 6)^2 - 1$; Find $f(-7)$

$f(-7) = (-7+6)^2 - 1$

$(-1)^2 - 1 = 1 - 1$

Quiz

Evaluate each function

1) $f(n) = n^2$; Find $f(-3)$

$f(-3) = (-3)^2 = -3 \cdot -3 = 9$

2) $g(t) = -2t^2 + 3$; Find $g(0)$

$g(0) = -2(0)^2 + 3$

$= -2(0) + 3$

$= 0 + 3 = 3$

January 22, 2019

Transformations

Objectives:

- I can identify transformation from an equation and graph

- I can graph a transformed parent function

Domain changes
Range changes

$y = \pm a f(\pm b(x \pm h)) \pm k$

	Vertical	Horizontal
Shift	$f(x) \pm k$	$f(x \pm h)$
Stretch/Compress	$af(x)$	$f(bx)$
Reflection	$-f(x)$	$f(-x)$

*Teacher note: desmos.com

State the parent function and identify the transformations and graph

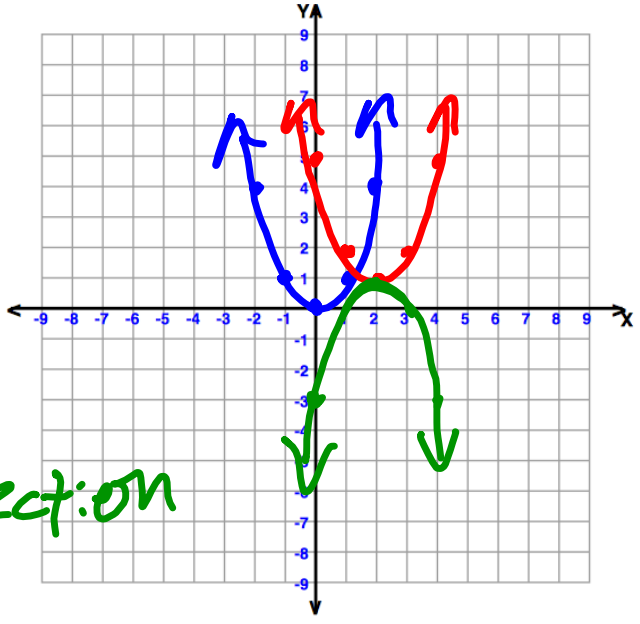
$$y = -(x-2)^2 + 1$$

V: (2, 1)

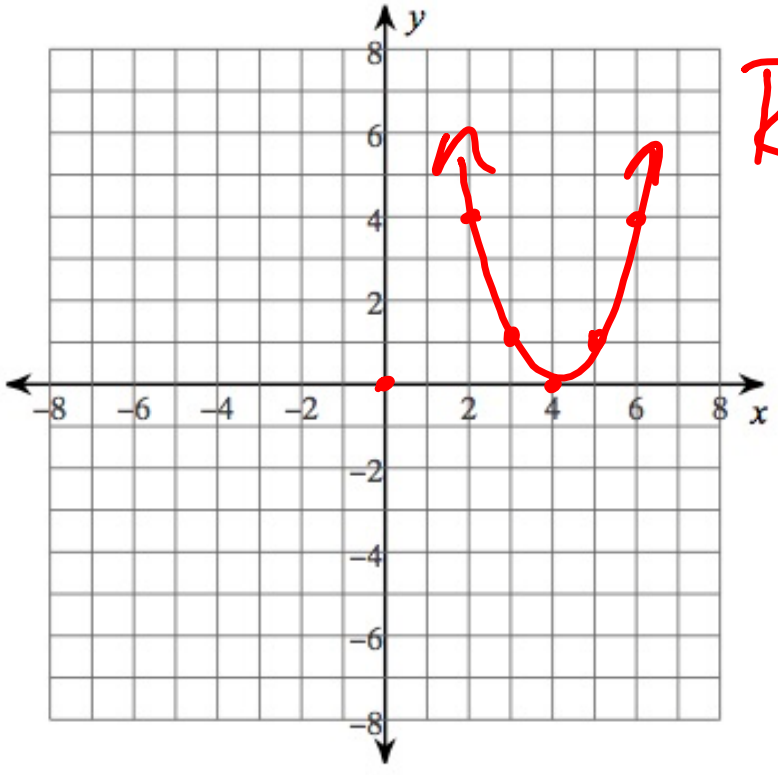
Right 2

UP 1

Flips in y direction

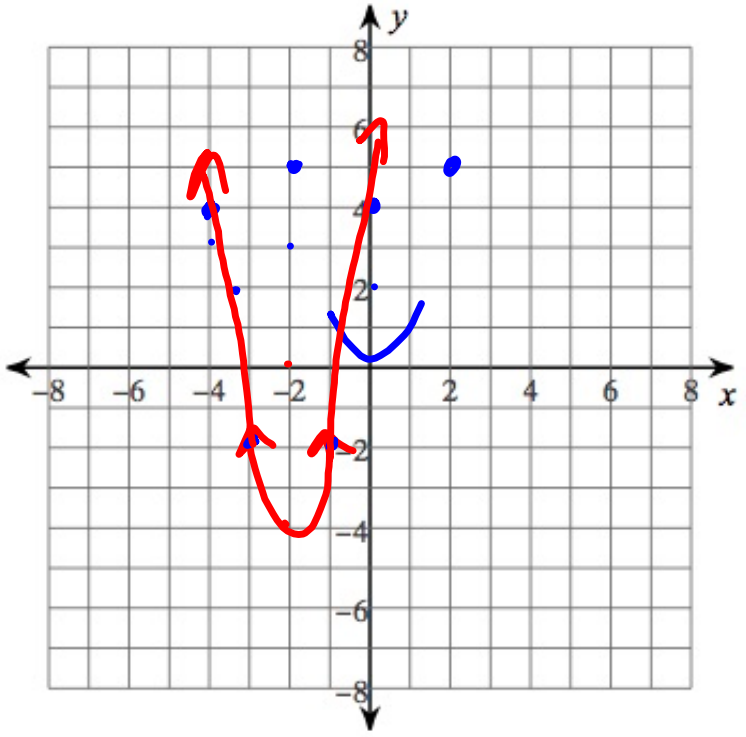


1) $f(x) = (x-4)^2$



Right 4
UP 0
V:(4,0)

2) $f(x) = 2(x+2)^2 - 4$



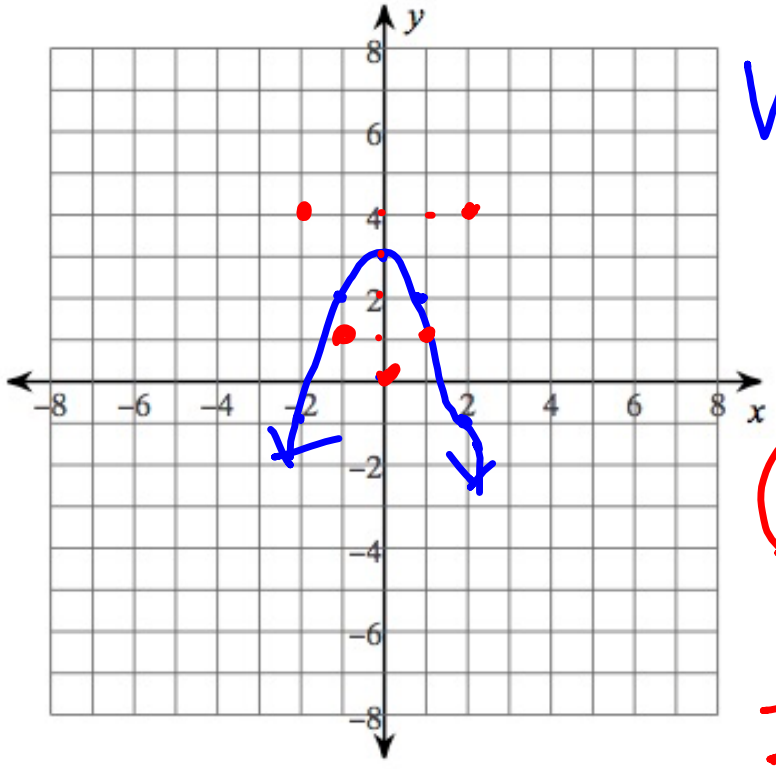
Left: 2

Down: 4

Stretch: 2

V: (-2, -4)

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



V=0,3

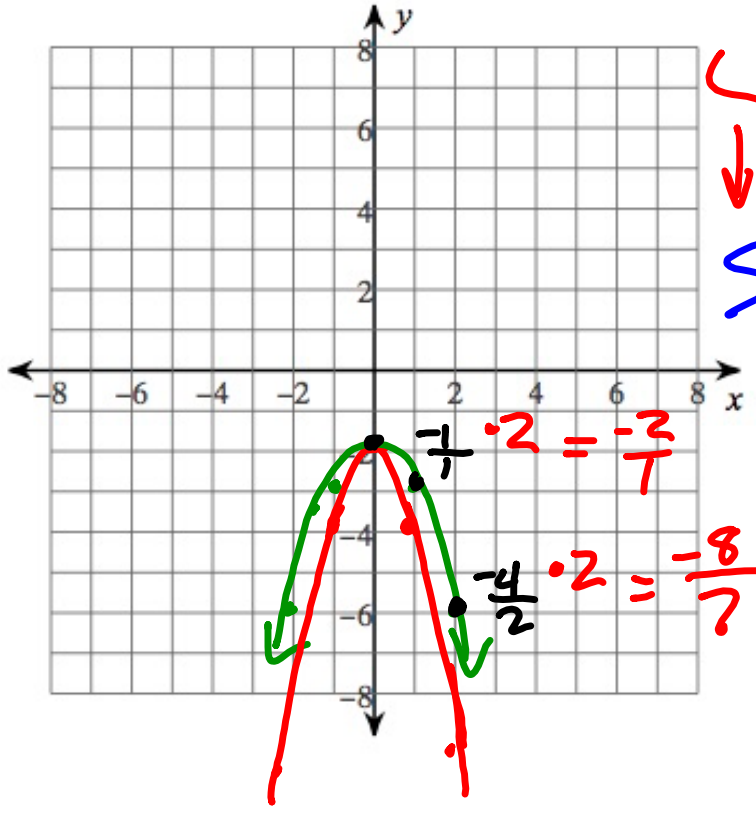
right 0

up 3

x^2

0	0
1	1
-1	1
2	4

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

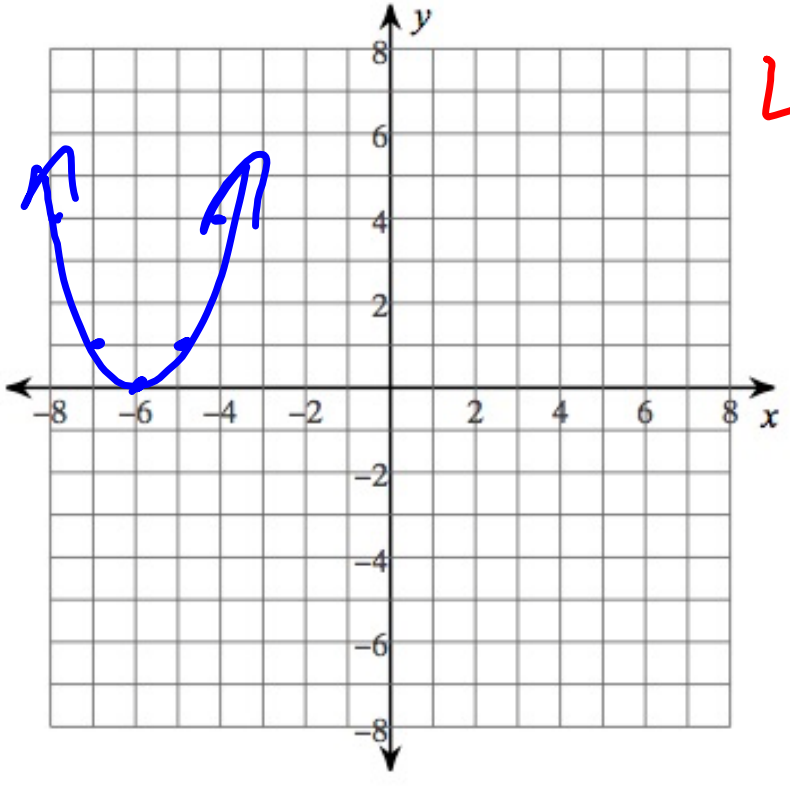


Left: 0

↓=2

Stretch: -2

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

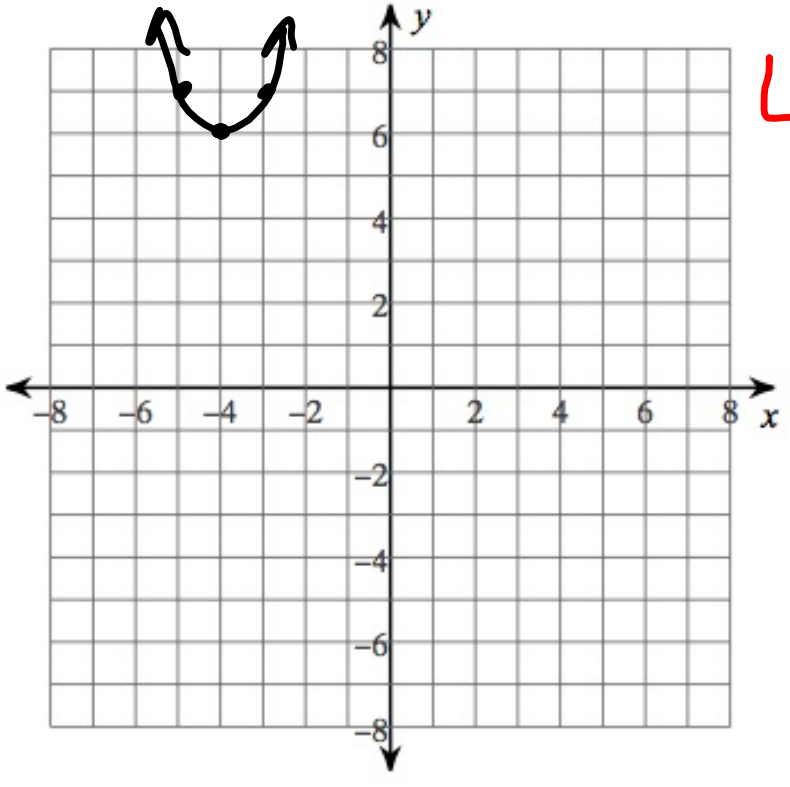


Left: 6

UP: 0

Stretch: No

$f(x) = (x + 4)^2 + 6$



Left: 4

UP: 6

Stretch: No