

Parent Functions

① $y = mx + b$ Slope Intercept Form

↑ ↑ ↑
y x b

slope y-intercept

(x, y)

Linear Equation

$y = mx$
will always go through the origin

$$y = -2x + 1$$

x	y
-2	5
-1	3
0	1
1	-1
2	-3

these are ordered pairs that we can graph on a coordinate plane

② $y = |x|$ Absolute Value Equation

x	y
-2	2
-1	1
0	0
1	1
2	2

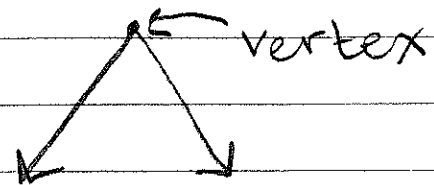
will always look like a "v"



$y = -|x|$

x	y
-2	-2
-1	-1
0	0
1	-1
2	-2

* the negative in front of the absolute reflects the graph over the x-axis



$$\textcircled{3} \quad y = x^2$$

Quadratic

x	y
-2	4
-1	1
0	0
1	1
2	4

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

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

* quadratics create
a parabola *

- NEVER use a
ruler to draw this
graph.

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

x	f(x)
-2	-4
-1	-1
0	0
1	-1
2	-4

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

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

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

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

$$f(-1) = -(1)$$

$$f(-1) = -1$$

$$f(0) = -(0)^2$$

$$f(0) = -(0)$$

$$f(0) = 0$$

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

$$f(1) = -(1)$$

$$f(1) = -1$$

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

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

$$f(2) = -4$$

* If the equation is given to you in function notation you need to show your work using the notation *

① $y = |x| - 4$

② $y = -x^2 + 3$

③ $f(x) = \frac{3}{4}x - 3$

$$y = |x| - 4$$

x	y
-2	-2
-1	-3
0	-4
1	-3
2	-2

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

x	y
-2	-1
-1	2
0	3
1	2
2	-1

$$b(x) = \frac{3}{4}x - 3$$

$$b(-2) = \frac{3}{4}(-2) - 3$$

$$b(-2) = -\frac{6}{4} - 3$$

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

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

x	b(x)
-2	$-4\frac{1}{2}$
-1	$-3\frac{3}{4}$
0	-3
1	$-2\frac{1}{4}$
2	$-1\frac{1}{2}$

$$b(-1) = \frac{3}{4}(-1) - 3$$

$$b(0) = \frac{3}{4}(0) - 3$$

$$b(-1) = -\frac{3}{4} - 3$$

$$b(0) = 0 - 3$$

$$b(-1) = -3\frac{3}{4}$$

$$b(0) = -3$$

$$b(1) = \frac{3}{4}(1) - 3$$

$$b(2) = \frac{3}{4}(2) - 3$$

$$b(1) = \frac{3}{4} - 3$$

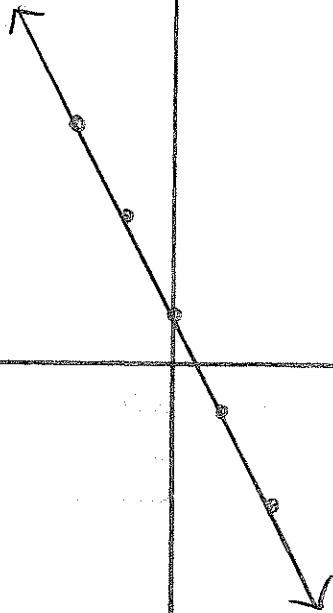
$$b(2) = \frac{6}{4} - 3$$

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

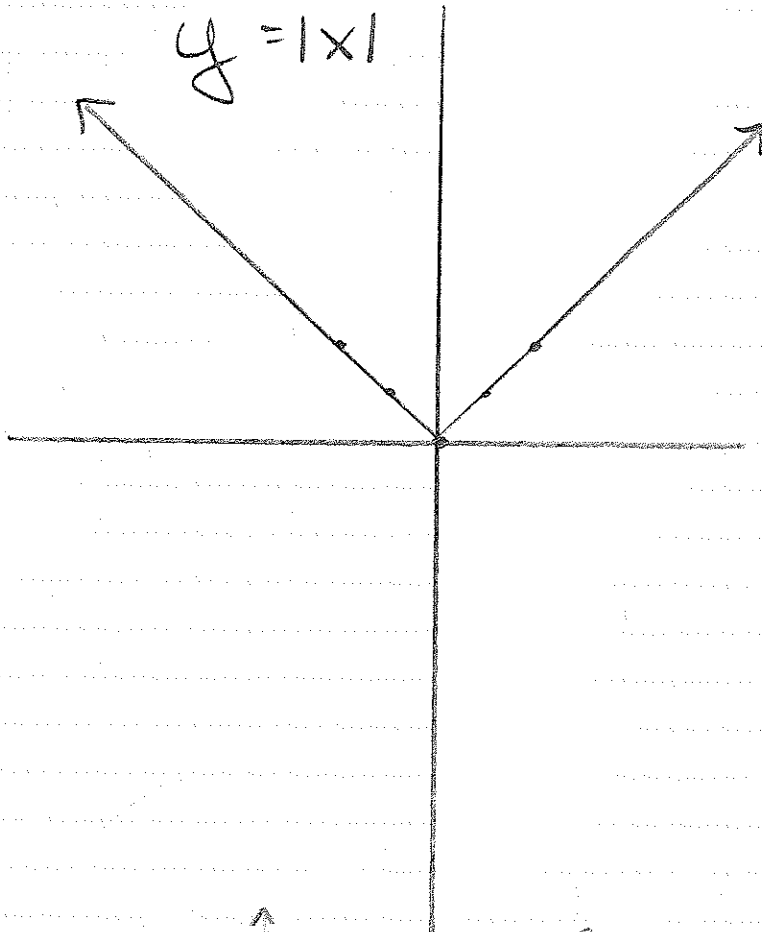
$$b(2) = 1\frac{1}{2} - 3$$

$$b(2) = -1\frac{1}{2}$$

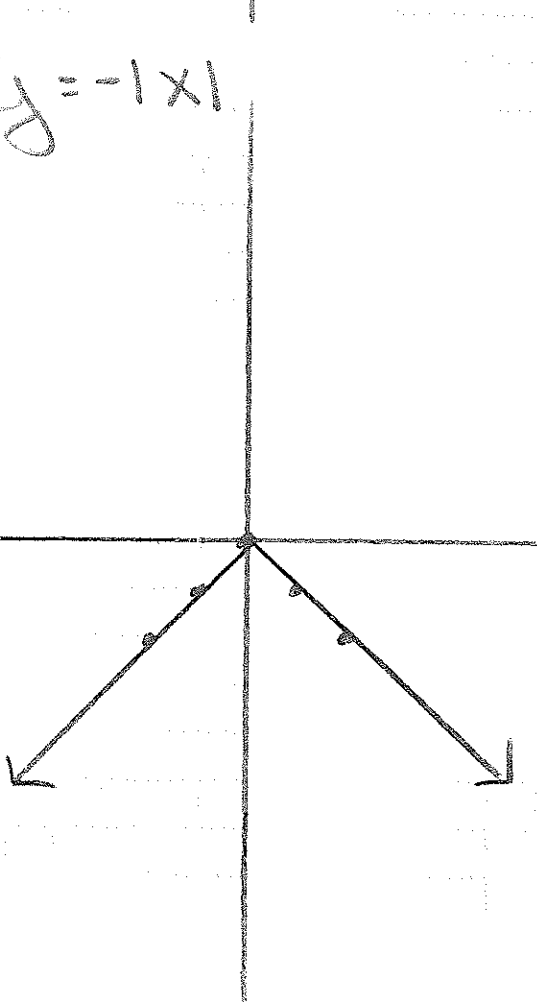
$$y = -2x + 1$$



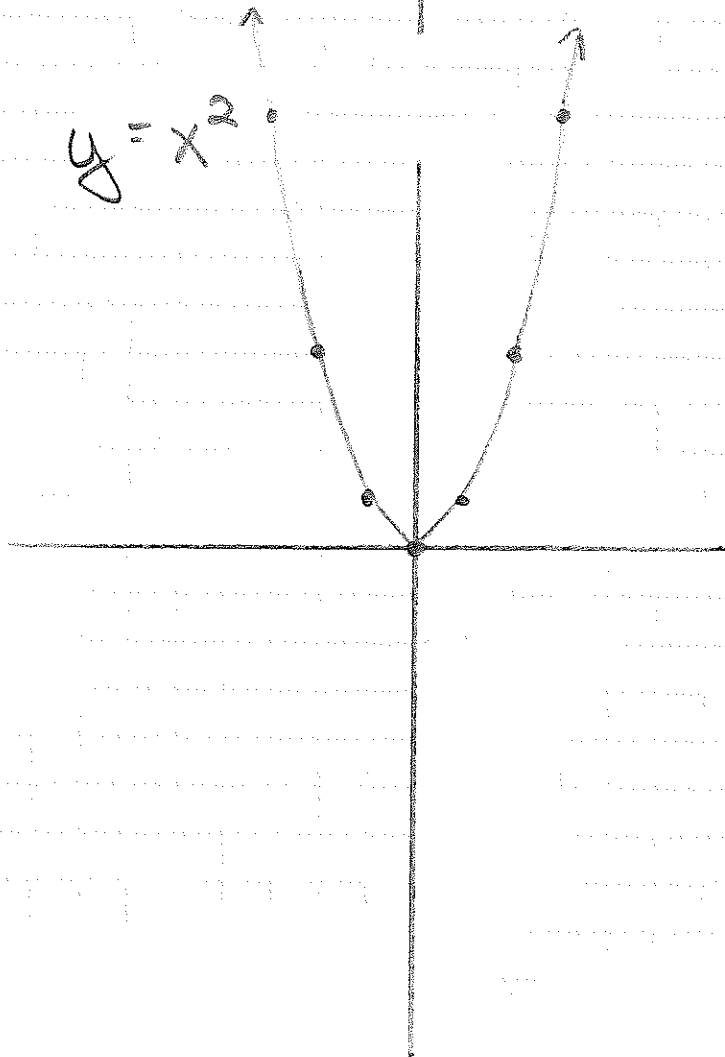
$$y = |x|$$



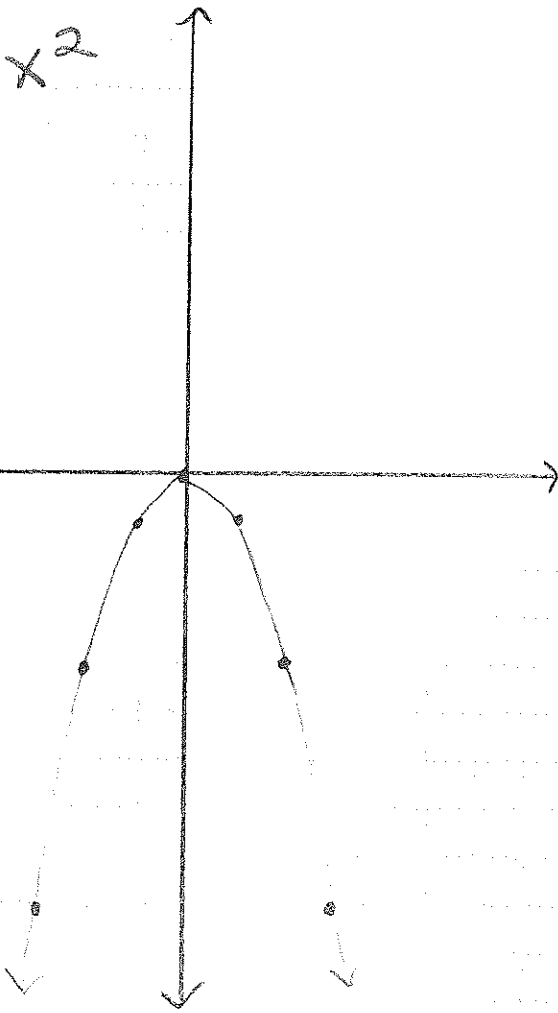
$$y = -|x|$$



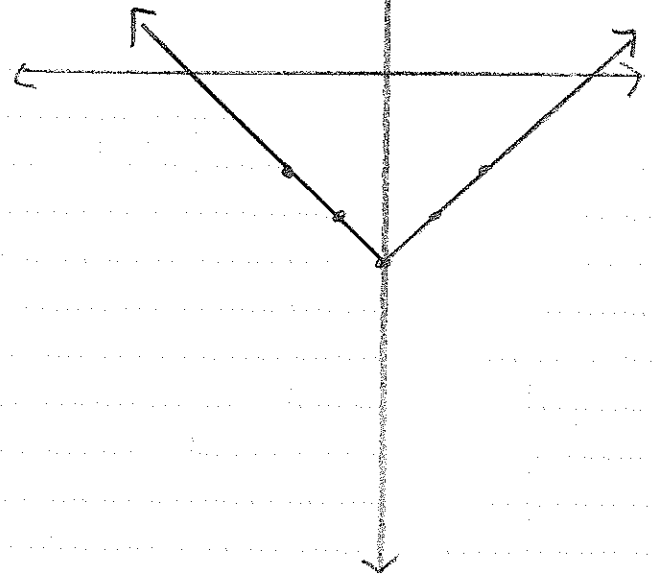
$$y = x^2$$



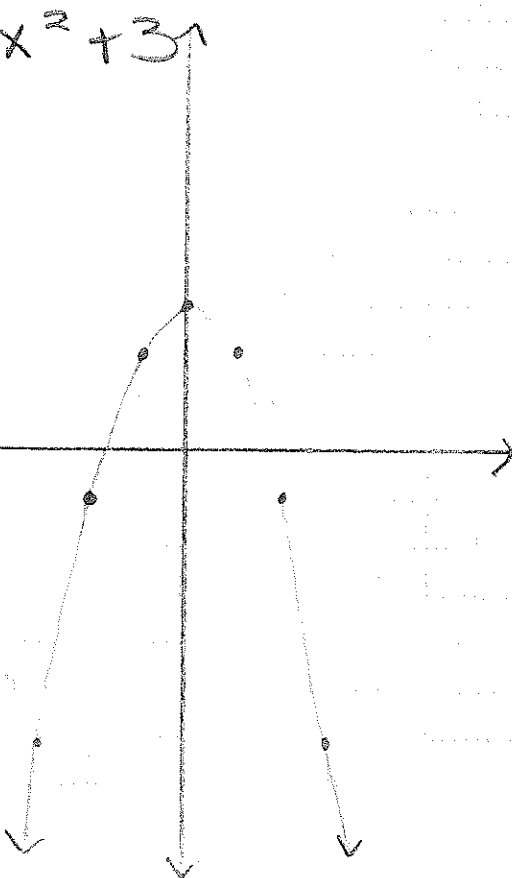
$$y = -x^2$$



$$y = |x| - 4$$



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



$$f(x) = \frac{3}{4}x - 3$$

