

Algebra 1

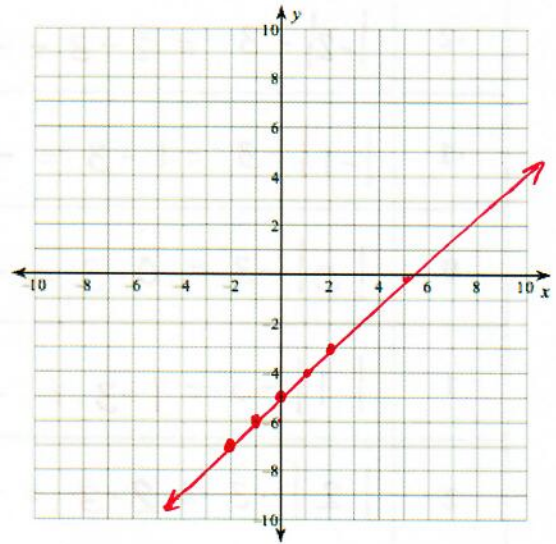
4.4 Practice Worksheet

Name KEY
Date _____

Directions: Graph each **LINEAR FUNCTION** using a table of values.

1. Graph $y = x - 5$ $y = mx + b$ **LINEAR**

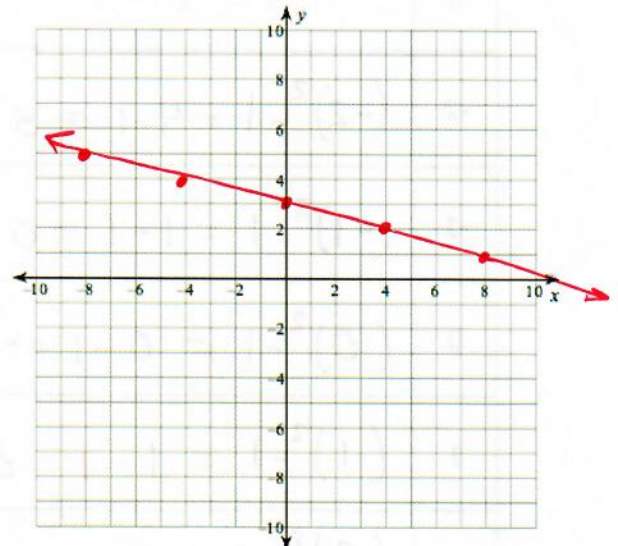
x	$y = x - 5$	(x, y)
-2	$-2 - 5 = -7$	$(-2, -7)$
-1	$-1 - 5 = -6$	$(-1, -6)$
0	$0 - 5 = -5$	$(0, -5)$
1	$1 - 5 = -4$	$(1, -4)$
2	$2 - 5 = -3$	$(2, -3)$



$y = mx + b$ **LINEAR**

2. Graph $y = -\frac{1}{4}x + 3$ (HINT: Choose x values that are easily divisible by 4.)

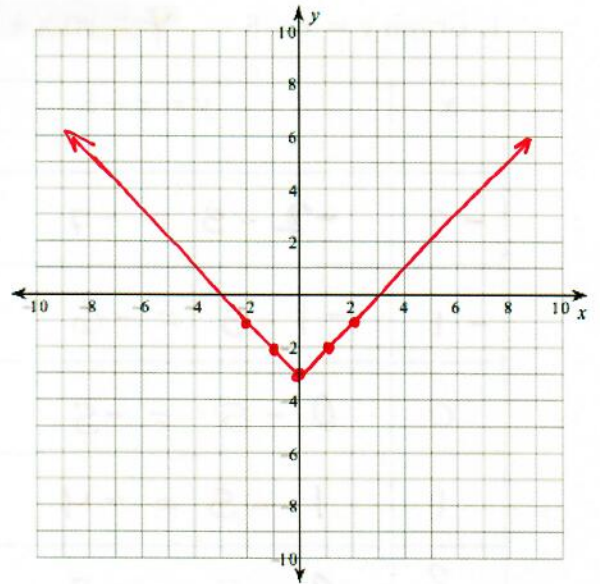
x	$y = -\frac{1}{4}x + 3$	(x, y)
-8	$-\frac{1}{4}(-8) + 3 = 2 + 3 = 5$	$(-8, 5)$
-4	$-\frac{1}{4}(-4) + 3 = 1 + 3 = 4$	$(-4, 4)$
0	$-\frac{1}{4}(0) + 3 = 0 + 3 = 3$	$(0, 3)$
4	$-\frac{1}{4}(4) + 3 = -1 + 3 = 2$	$(4, 2)$
8	$-\frac{1}{4}(8) + 3 = -2 + 3 = 1$	$(8, 1)$



Directions: Graph each **NON-LINEAR FUNCTION** using a table of values.

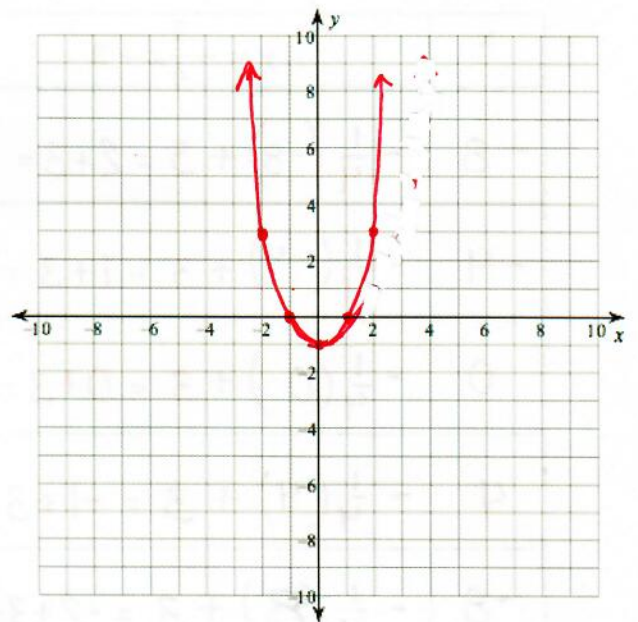
3. Graph $y = |x| - 3$ **Absolute Value** ∇ or \blacktriangledown

x	$y = x - 3$	(x, y)
-2	$ -2 - 3 = 2 - 3 = -1$	$(-2, -1)$
-1	$ -1 - 3 = 1 - 3 = -2$	$(-1, -2)$
0	$ 0 - 3 = 0 - 3 = -3$	$(0, -3)$
1	$ 1 - 3 = 1 - 3 = -2$	$(1, -2)$
2	$ 2 - 3 = 2 - 3 = -1$	$(2, -1)$



4. Graph $y = x^2 - 1$ **Quadratic** \cup or \cap

x	$y = x^2 - 1$	(x, y)
-2	$(-2)^2 - 1 = 4 - 1 = 3$	$(-2, 3)$
-1	$(-1)^2 - 1 = 1 - 1 = 0$	$(-1, 0)$
0	$(0)^2 - 1 = 0 - 1 = -1$	$(0, -1)$
1	$(1)^2 - 1 = 1 - 1 = 0$	$(1, 0)$
2	$(2)^2 - 1 = 4 - 1 = 3$	$(2, 3)$



5. **Circle** if the equation represents a linear or non-linear function.

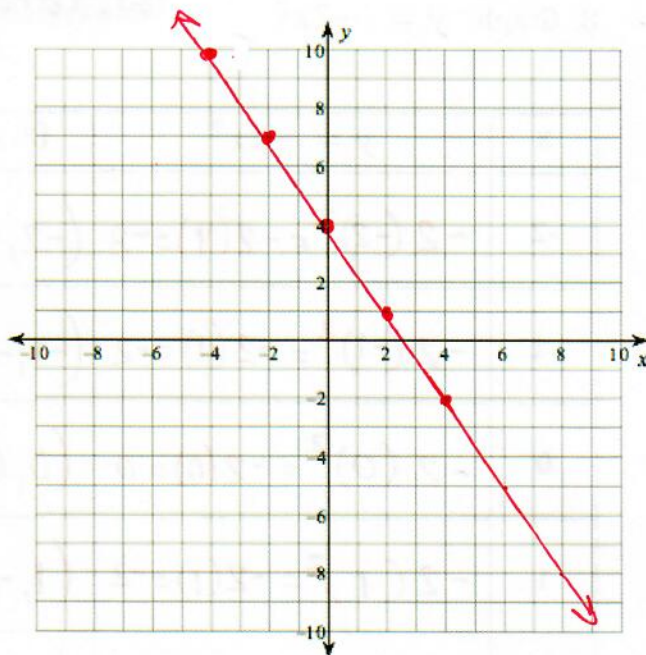
- a. $y = -2x + 7$ $y = mx + b$
LINEAR or NON-LINEAR
- b. $y = \frac{4}{5}x^2 - 3$ LINEAR or NON-LINEAR Quadratic ↻
- c. $y = 5|x| - 2$ LINEAR or NON-LINEAR Absolute Value ↻
- d. $y = \frac{2}{3}x + 1$ LINEAR or NON-LINEAR
 $y = mx + b$

MIXED PRACTICE Graph each **LINEAR** or **NON-LINEAR** function using a table.

$y = mx + b$ **LINEAR**

6. Graph $y = -\frac{3}{2}x + 4$ (HINT: Choose x values that are divisible by 2)

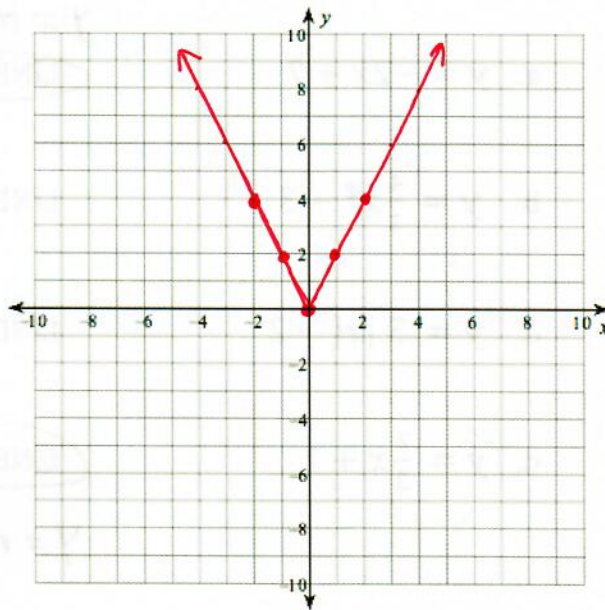
x	$y = -\frac{3}{2}x + 4$	(x, y)
-4	$-\frac{3}{2}(-4) + 4 = 6 + 4$	(-4, 10)
-2	$-\frac{3}{2}(-2) + 4 = 3 + 4$	(-2, 7)
0	$-\frac{3}{2}(0) + 4 = 0 + 4$	(0, 4)
2	$-\frac{3}{2}(2) + 4 = -3 + 4$	(2, 1)
4	$-\frac{3}{2}(4) + 4 = -6 + 4$	(4, -2)



7. Graph $y = |-2x|$

Absolute Value ↗ or ↘

x	$y = -2x $	(x, y)
-2	$ -2(-2) = 4 = 4$	(-2, 4)
-1	$ -2(-1) = 2 = 2$	(-1, 2)
0	$ -2(0) = 0 = 0$	(0, 0)
1	$ -2(1) = -2 = 2$	(1, 2)
2	$ -2(2) = -4 = 4$	(2, 4)



8. Graph $y = -2x^2$

Quadratic ↻ or ↻

x	$y = -2x^2$	(x, y)
-2	$-2(-2)^2 = -2(4) = -8$	(-2, -8)
-1	$-2(-1)^2 = -2(1) = -2$	(-1, -2)
0	$-2(0)^2 = -2(0) = 0$	(0, 0)
1	$-2(1)^2 = -2(1) = -2$	(1, -2)
2	$-2(2)^2 = -2(4) = -8$	(2, -8)

