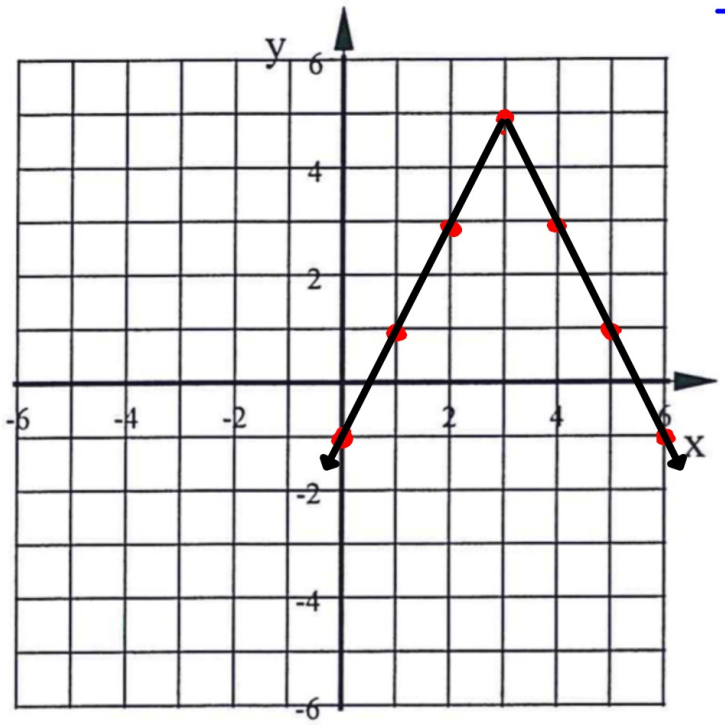
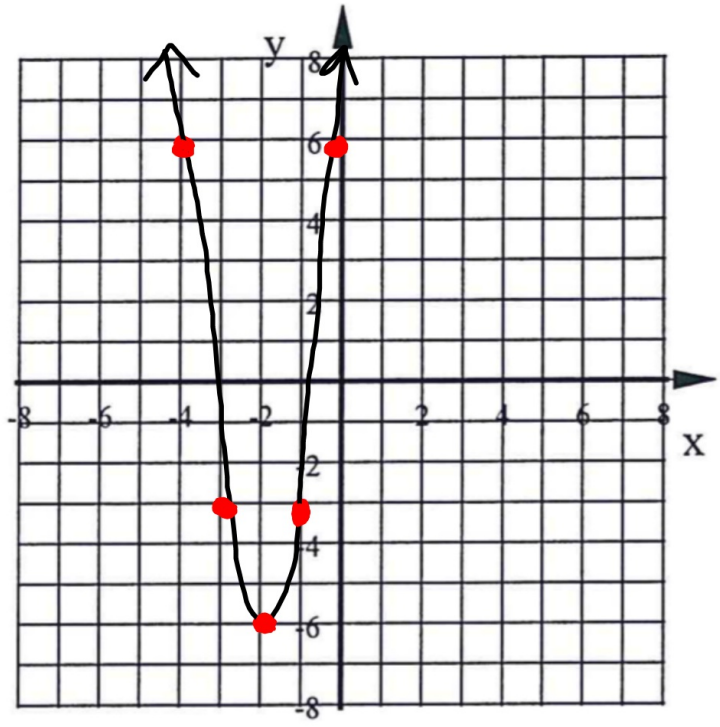
Graph each using at least 5 points.

1. $y = -2|x - 3| + 5$



x	y
0	-1
1	1
2	3
3	5
4	3
5	1
6	-1

2. $f(x) = 3(x + 2)^2 - 6$



x	y
-4	6
-3	-3
-2	-6
-1	-3
0	6

3. Use these functions: $f(x) = 2x^2 - 5$ $g(y) = 5 - 4y$

Find $4f(2) - g(-3)$

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

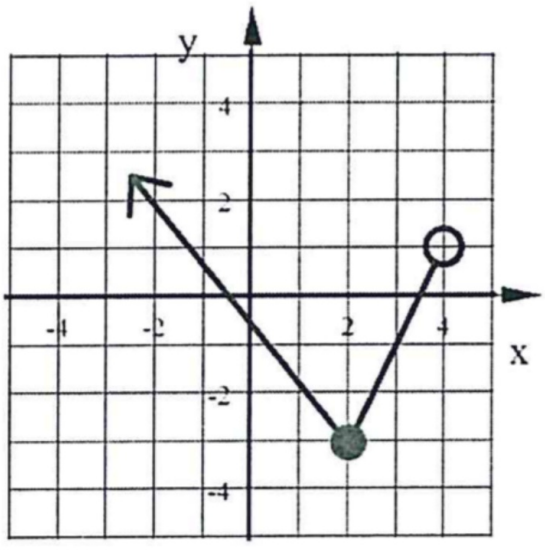
$g(-3) = 5 + 12$
$= 17$

$4(3) - 17$

$12 - 17$

$= -5$

4. Find the Domain and Range of this relation shown below.



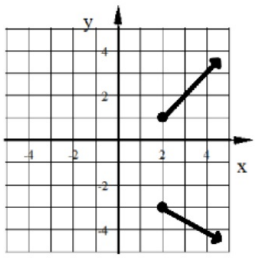
Domain: $x < 4$

Range: $y \geq -3$

Quiz Review

1. Write the domain and range of each graph.

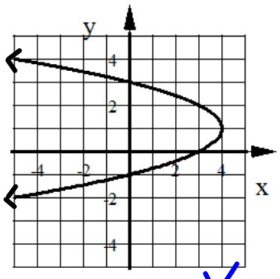
a.



Domain: $x \geq 2$

Range: $y \leq -3, y \geq 1$

b.



Domain: $x \leq 4$

Range: $(-\infty, \infty)$ $\mathbb{R}$

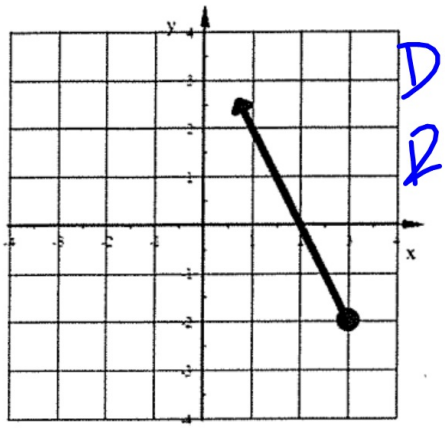
2. Find the domain and range of each.

a) $(6,7)\ (4,-1)\ (-6,7)\ (-1,3)$

D: $\{-6, -1, 4, 6\}$

R: $\{-1, 3, 7\}$

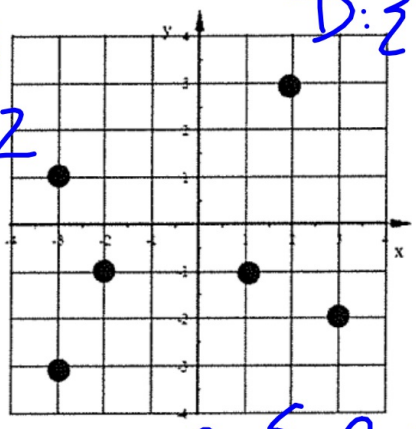
b) Use the graph below.



D: $x \leq 3$

R: $y \geq -2$

c) Use the graph below.



D: $\{-3, -2, 1, 2, 3\frac{3}{3}\}$

R: $\{-3, -2, -1, 1, 3\frac{3}{3}\}$

3. Is each relation a function?

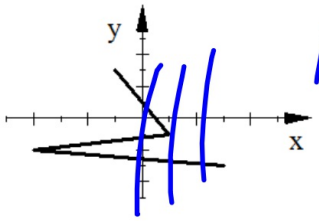
a) $(-6,4),(-2,6),(1,4),(5,-1),(2,5)$ yes

b) The table below

X	Y
8	6
−3	−9
2	−7
−3	4

NO.

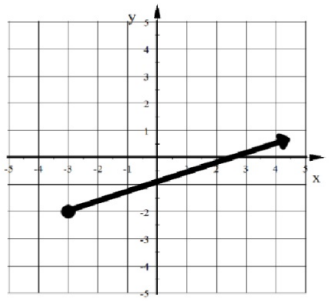
c) The graph below



NO.

4. State the domain and range of each graph.

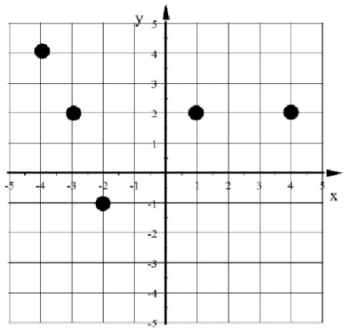
a)



Domain: $x \geq -3$

Range: $y \geq -2$

b)



Domain: $\{-4,-3,-2,1,4\}$

Range: $\{-1,2,4\}$

5. Use these two functions: $h(m) = 3m^2 - 10$ $w(c) = 4c - 1$

a) Find $h(-4)$ $h(-4) = 3(-4)^2 - 10$
$= 38$

b) Find c if $w(c) = 25$
$25 = 4c - 1$
$26 = 4c$
$c = 6.5$

c) Find $10h(2) + w(2)$
$10 \cdot 2 + 7$
$= 27$

6.) Use what you know about each equation to state what the shape of the graph will be and, if applicable, which way it opens

$y = 3x^2 + 6x + 1$

$y = -6x + 1$

$y = -2|x + 1| - 5$

Section 5-4

Writing a Function Rule: → Writing an Equation

Write a function rule for this situation. Define your variables.

1. The amount of money you raise is a function of how many miles you walk. People have pledged a total of $7.50 for every mile you walk.

EQ: $y = 7.50x$ Variables: $y = \$$, $x = mi.$

2. A Regular Polygon has sides that are equal in length. The perimeter of a Regular Pentagon is a function of the length of each side.

EQ: $y = 5x$ Variables: $y =$ perimeter, $x =$ length of each side.

3. The amount of money in your account is a function of how many deposits you've made. You had $136 in your account then deposit $15 each week.

EQ: $136 + 15x = y$ Variables: $y = \#$

$x =$ weeks.

Write a function rule to model the data in each table.

1.

X	Y
2	5
4	7
6	9
8	11

$y = x + 3$

2.

X	Y
-4	-10
-2	-5
2	5
4	10

$y = 2.5x$

Write a function rule to model the data in each table.

3.

X	Y
-2	-9
-1	-8
0	-7
1	-6

$y = x - 7$

4.

X	Y
-24	6
-16	4
0	0
8	-2
12	-3

$y = \frac{x}{-4}$

Write a function rule for each situation.

1. The total hours spent cutting lawns if each lawn takes 1.25 hours to cut.

2. A rental car costs $18.50 for the day plus $0.25 per mile for every mile over 100 miles.

3. The number of stamps Juan has if he has three more than Ali.

4. The amount of Yolanda's paycheck if she gets paid 5% of her total sales each month.

Write a function rule for each situation. Define your variables.

1. The total hours spent cutting lawns if each lawn takes 1.25 hours to cut.

EQ: $y = 1.25x$

Variables: $y =$ hrs
$x =$ lawns.

2. A rental car costs $18.50 for the day plus $0.25 per mile for every mile over 100 miles.

EQ: $y = 18.50 + .25m$

Variables: $y =$ $
$m =$ mi.

3. The number of stamps Juan has if he has three more than Ali.

EQ: $J = A + 3$

Variables:

J = Juan stamps

A = Alis "

4. The amount of Yolanda's ~~paycheck~~ money if she gets paid $1200 + 5% of her total sales each month.

EQ: $y = 1200 + 0.05X$

Variables:

y = $

X = total sale each mon.

5. Write a function rule for this situation. Define your variables. The number of shots Susan makes is a function of how many shots she takes. She makes 70% of her shots.

EQ: $y = .70x$

Variables: y = shots taken

x = shots made

1. Write a function rule for the data in each table.

a)

x	y
−6	21
−4	14
0	0
8	−28

$y = -3.5x$

b)

x	y
−8	3
−5	6
0	11
3	14

$y = x + 11$

2. Write a function rule to model the data in this table.

X	Y
-2	-7
-1	-5
0	-3
1	-1
2	1

$y = mx - 3$

$-1 = m(1) - 3$

$2 = 1m$

$m = 2$

$\frac{y_2 - y_1}{x_2 - x_1}$

$y = 2x - 3$

3. Write a function rule to model the data in this table.

x	y
-2	-2
-1	1
0	4
1	7
2	10

$y = mx + 4$

$7 = m(1) + 4$

$3 = m$

$m = \frac{y_2 - y_1}{x_2 - x_1}$

$y = 3x + 4$

4. Write a function rule to model the data in this table.

x	y
−4	29
−3	25
−1	17
0	13
2	5

$y = x + 13$ $\quad y = -4x + 13$

m

$5 = m(2) + 13$

$-8 = 2m$

$m = -4$

You can now complete Hwk #31 (due Monday after break)

Sec 5-4

Pages 256-257

Problems 4-6, 12-14, 21

IXL #12: Q.5 & Q.7 due Friday at 4pm!