INTERMEDIATE ALGEBRA — #1 REVIEW WKSHT. ~~HW #6~~

1. STATE WHETHER OR NOT THE RELATION IS A FUNCTION.

a. $\{(-4,5),(3,-2),(-4,7)\}$ No

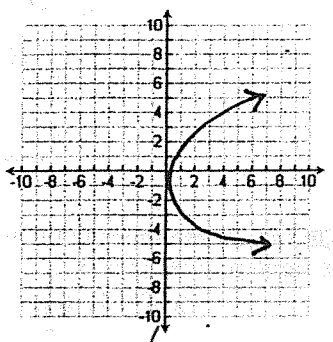
b. $\left\{\left(\frac{3}{2},\frac{1}{2}\right),\left(\frac{1}{3},\frac{1}{4}\right),\left(-\frac{1}{5},\frac{1}{4}\right)\right\}$ Yes

c.

x	y
$\frac{1}{2}$	-11
$\frac{1}{4}$	10
2	-9
3	8

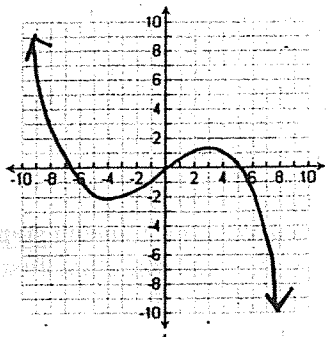
No

d.



No

e.



Yes

2. STATE THE DOMAIN AND RANGE OF EACH FUNCTION.

a. $\{(-5,12),(0,-3),(6,4)\}$

D: $\{-5,0,6\}$

R: $\{-3,4,12\}$

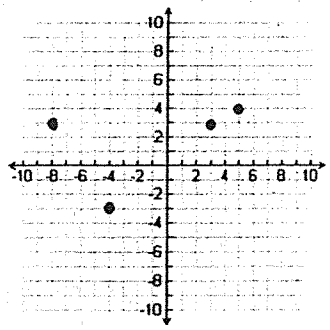
b.

x	y
5	2
12	2
-3	-7
4	8

D: $\{-3,4,5,12\}$

R: $\{-7,2,8\}$

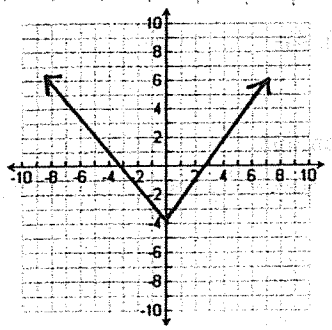
c.



DOMAIN: $\{-8,-4,3,5\}$

RANGE: $\{-3,3,4\}$

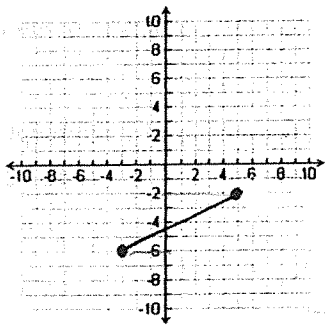
d.



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

RANGE: $[-4,\infty)$

e.



DOMAIN: $[-3,5]$

RANGE: $[-6,-2]$

3. FIND THE SLOPE OF THE LINE THROUGH EACH PAIR OF POINTS. LEAVE ALL ANSWERS AS REDUCED, IMPROPER FRACTIONS.

a. (4,-2) AND (-5,-1)

$$\frac{-1--2}{-5-4}=-\frac{1}{9}$$

b. (3,7) AND (-5,0).

$$\frac{0-7}{-5-3}=\frac{7}{8}$$

c. (3,6) AND (-2,6)

$$\frac{6-6}{-2-3}=0$$

d. (8,4) AND (8,0)

$$\frac{0-4}{8-8}=\text{undefined}$$

4. Write the equation for a line in **point-slope form** that has the indicated slope and contains the given point:

a. slope = -4 and (-5, 2)

$y - 2 = -4(x+5)$

b. slope = $\frac{1}{3}$ and (8, -10)

$y+10 = \frac{1}{3}(x-8)$

5. Write the equation for a line in **slope-intercept form** that has the indicated slope and contains the given point:

a. slope = $-\frac{1}{4}$ and (4, -8)

$y+8 = -\frac{1}{4}(x-4)$

$y+8 = -\frac{1}{4}x+1$

$y = -\frac{1}{4}x - 7$

b. slope = 5 and (-9, 4)

$y-4 = 5(x+9)$

$y-4 = 5x+45$

$y = 5x+49$

6. Write the equation for a line in **slope-intercept form** that passes through the following points:
(Hint: you must find the slope first, then follow the same process in #5).

a. (-1, -4) and (-2, 5)

$m = \frac{5--4}{-2--1} = -9$

$y+4 = -9(x+1)$

$y = -9x - 13$

b. (2, 3) and (-4, 6)

$m = \frac{6-3}{-4-2} = -\frac{1}{2}$

$y-6 = -\frac{1}{2}(x+4)$

$y = -\frac{1}{2}x + 4$

7. Write the equation for a line with the following information:

a. horizontal line that contains (8, -10). $y = -10$

b. vertical line that contains (11, -13). $x = 11$

c. line with a slope of zero that contains (-12, 14). $y = 14$

d. line with an undefined slope that contains (-6, 4). $x = -6$

8. Find the slope and y-intercept (as a point) of each line.

a. $y = 3x - 4$

$m = 3$

$b = (0, -4)$

b. $4x - 2y = 8$

$y = 2x - 4$

$m = 2$

$b = (0, -4)$

c. $f(x) = \frac{1}{2}x - 2$

$y = \frac{1}{2}x - 2$

$m = \frac{1}{2}$

$b = (0, -2)$

d. $y = 4$

$y = 0x + 4$

$m = 0$

$b = (0, 4)$

e. $x = 4$

- undefined slope
- no y-intercept (vertical line that never crosses y-axis.)

9. Find the x-intercept and y-intercept of each linear equation (as points).

a. $3x - 4y = 12$

$3x - 4(0) = 12 \quad x = 4$

x-intercept: $(4, 0)$

$3(0) - 4y = 12 \quad y = -3$

y-intercept: $(0, -3)$

b. $2x + 10 = 5y$

$2x + 10 = 5(0) \quad x = -5$

x-intercept: $(-5, 0)$

$2(0) + 10 = 5y \quad y = 2$

y-intercept: $(0, 2)$

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