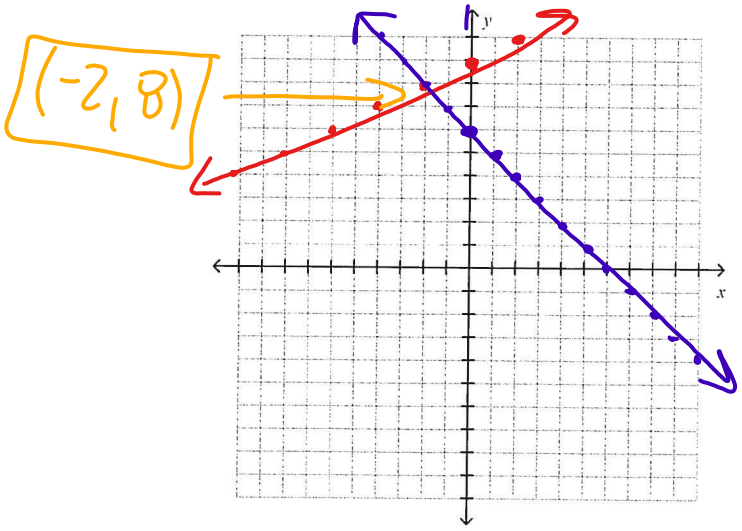
Name: _____ Class: _____ Date: _____

8th Grade Pre-Algebra Chapter 9 Test Review

1. Solve by graphing.

① $y = \frac{1}{2}x + 9$ $m = \frac{1}{2}$ $b = 9$

② $y = -x + 6$ $m = -1$ $b = 6$



2. Solve using substitution.

$x = y + 10$ $-14 + 10 = -4$

$5x - y = -6$

$5(y + 10) - y = -6$

$5y + 50 - y = -6$

$4y + 50 = -6$

$-50 \quad -50$

$\frac{4y}{4} = \frac{-56}{4}$

$y = -14$

$(-4, -14)$

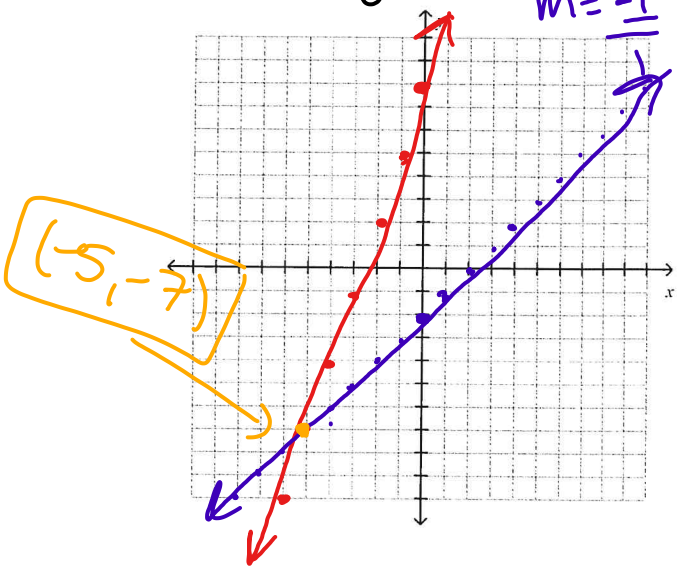
3. Solve by graphing.

$-3x + y = 8$ ① $y = 8 + 3x$ $m = \frac{3}{1}$ $b = 8$

$+3x \quad +3x$

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

$+x \quad +x$



4. Solve using substitution.

$2x - 3y = -14$

$-3x + y = 7$

$+3x \quad +3x$

$y = 7 + 3x$

$2x - 3(7 + 3x) = -14$

$2x - 21 - 9x = -14$

$-7x - 21 = -14$

$+21 \quad +21$

$\frac{-7x}{-7} = \frac{7}{-7}$

$x = -1$

$y = 7 + 3 \cdot -1$

$y = 7 + -3$

$y = 4$

$(-1, 4)$

5. Solve using substitution.

$3x = 9$ $\quad x = 3$

$-2x + y = -8$

$-2(3) + y = -8$

$-6 + y = -8$

$+6 \quad +6$

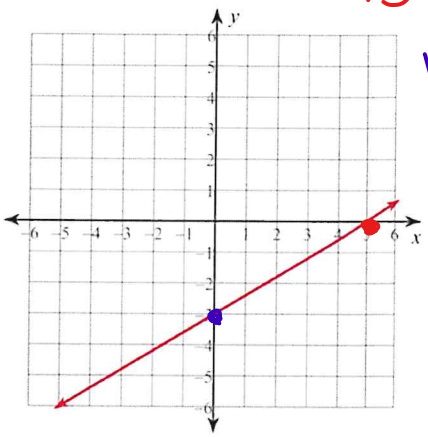
$y = -2$

$(3, -2)$

7. Identify the x- and y-intercepts of the graph below.

x-int: 5

y-int: -3



6. Rewrite the equation $3y - 2x = 6$ in slope-intercept form. Label the slope and y-intercept.

y by itself

$3y - 2x = 6$

$+2x \quad +2x$

$\frac{3y}{3} = \frac{6}{3} + \frac{2x}{3}$

$y = 2 + \frac{2}{3}x$

$m = \frac{2}{3}$ slope $\quad b = 2$ y-int

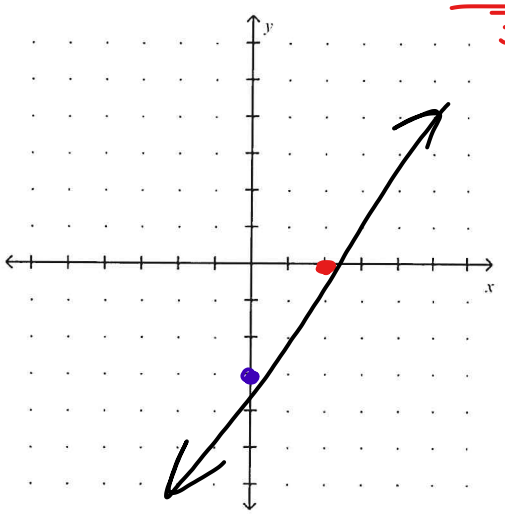
8. Find the x- and y-intercepts. Then sketch the graph of the line.

$3x - 2y = 6$

x-int: $(y = 0)$ $\quad 3x - 2 \cdot 0 = 6$

$\frac{3x}{3} = \frac{6}{3}$

$x = 2$



y-int: $(x = 0)$ $\quad 3 \cdot 0 - 2y = 6$

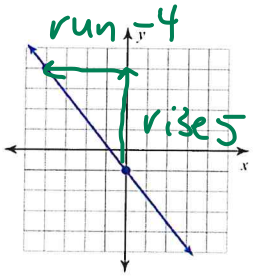
$\frac{-2y}{-2} = \frac{6}{-2}$

$y = -3$

$\frac{\text{rise}}{\text{run}}$

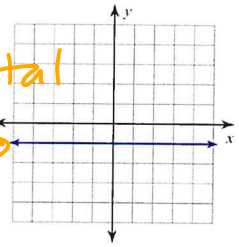
9. Find the slopes of each line graphed below:

a.)



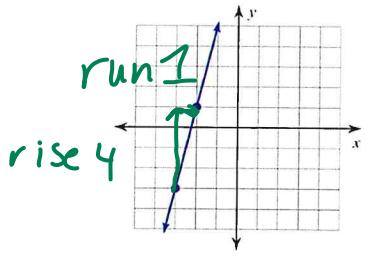
$\frac{5}{-4}$

b.)



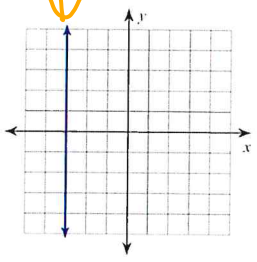
0

c.)



$\frac{4}{1} = 4$

d.)



no slope/ undefined

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

10. For the following pairs of points, find the slope. **Show your work!**

$x_1\ y_1\ x_2\ y_2$

a.) (6, -12), (15, -3)

$m = \frac{-3 + 12}{15 - 6} = \frac{9}{9} = \boxed{1}$

$x_1\ y_1\ x_2\ y_2$

b.) (17, -13), (17, 8)

$m = \frac{8 + 13}{17 - 17} = \frac{21}{0} = \boxed{\text{undefined}}$

$x_1\ y_1\ x_2\ y_2$

c.) (19, -2), (-11, 10)

$m = \frac{10 + 2}{-11 - 19} = \frac{12}{-20} = \boxed{\frac{3}{-5}}$

$x_1\ y_1\ x_2\ y_2$

d.) (19, 3), (20, 3)

$m = \frac{3 - 3}{20 - 19} = \frac{0}{1} = \boxed{0}$

x's cannot repeat

11. Decide whether each relation is a function.

x	4	0	9	−3
y	2	−5	6	−5

a) function

$\{(-1,5),(3,2),(4,6),(-9,2)\}$

b) function

x	−7	3	1	−7
y	8	−4	0	−1

c) Not a function

12. Evaluate each function.

a) Find $f(-3)$ if $f(x) = 6x + 1$.

$f(-3) = 6(-3)+1 = -18+1 = \boxed{-17}$

b) Find $g(8)$ if $g(x) = \frac{1}{2}x - 4$.

$g(8) = \frac{1}{2}(8)-4 = 4-4 = \boxed{0}$

c) Find $k(-5)$ if $k(x) = |x+3|$.

$k(-5) = |-5+3| = |-2| = \boxed{2}$

d) Find $j(-9)$ if $j(x) = 3 - 4x$.

$j(-9) = 3-4(-9) = 3++36 = \boxed{39}$