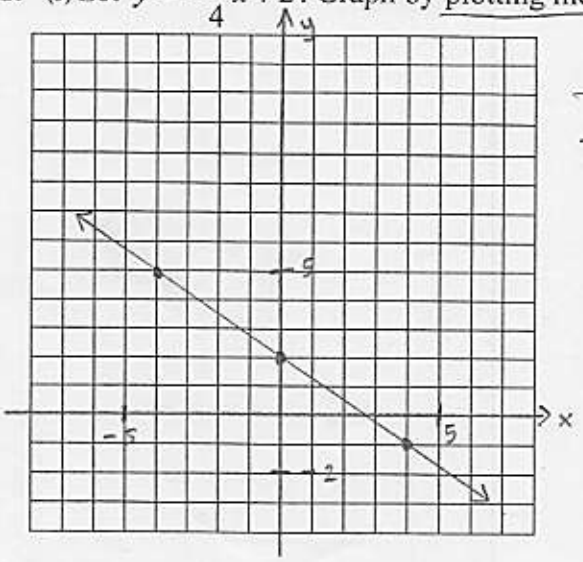
Math 30 Test 2 Name: _____

Show all necessary work NEATLY, CLEARLY, and SYSTEMATICALLY. Any understatement and/or incorrect statement may be penalized.

1. (5) Let $y = -\frac{3}{4}x + 2$. Graph by plotting method.



x	y
-4	5
0	2
4	-1

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

$= 3 + 2$

$= 5$

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

$= -3 + 2$

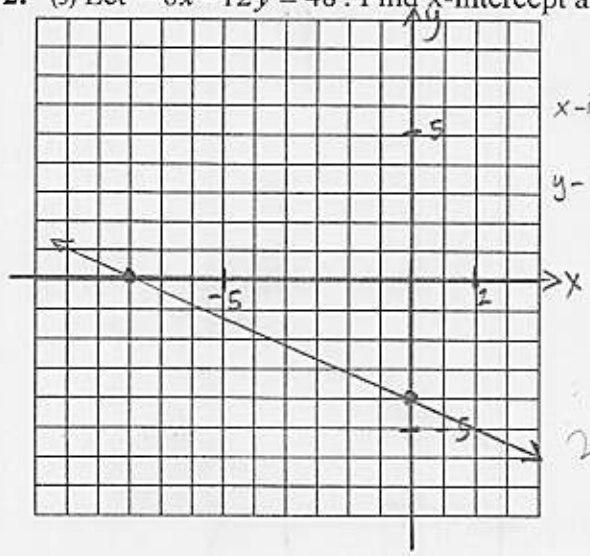
$= -1$

$y = -\frac{3}{4}(0) + 2$

$= 0 + 2$

$= 2$

2. (5) Let $-6x - 12y = 48$. Find x-intercept and y-intercept. Then use those intercepts to graph.



	x	y
x-inter.	-8	0
y-inter.	0	-4

$-6x - 12(0) = 48$ 1.5

$-6x = 48$

$x = -8$

$-6(0) - 12y = 48$ 1.5

$-12y = 48$

$y = -4$

2

3. (5)Find the equation of the line that passes through the point (- 2, - 2) and has slope $\frac{2}{3}$. Write the result in slope-intercept form.

$y - y_1 = m(x - x_1)$

$y - (-2) = \frac{2}{3}(x - (-2))$

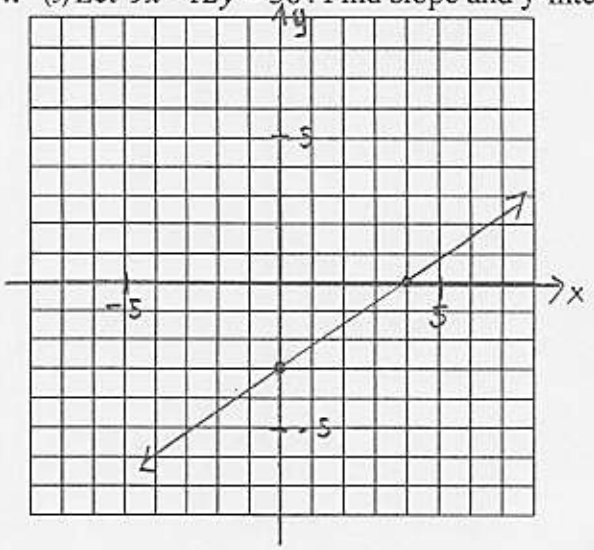
$y + 2 = \frac{2}{3}(x + 2)$

$y + 2 = \frac{2}{3}x + \frac{4}{3}$

$y = \frac{2}{3}x + \frac{4}{3} - 2$

$y = \frac{2}{3}x - \frac{2}{3}$ //

4. (5) Let $9x-12y=36$. Find slope and y-intercept. Then use those to graph.



$9x - 12y = 36$

$-12y = -9x + 36$

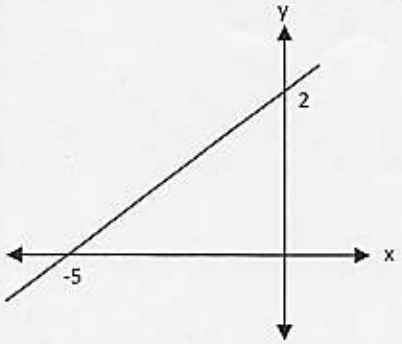
$y = \frac{-9x}{-12} + \frac{36}{-12}$

$y = \frac{3}{4}x - 3$

slope: $m = \frac{3}{4}$

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

5. (5) Consider the following graph. Find



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

b. y-intercept: $(0, 2)$

c. Slope: $m = \frac{2}{5}$

d. Equation in slope-intercept form. $y = \frac{2}{5}x + 2$ //

6. (5) Find the equation of a line contains $\overset{x_1}{(-4}, \overset{y_1}{-5})$ and $(-2, -3)$. Writhe the result in standard form.

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

$= \frac{-3 - (-5)}{-2 - (-4)}$

$= \frac{2}{2}$

$= 1$

$y - y_1 = m(x - x_1)$

$y - (-5) = 1(x - (-4))$

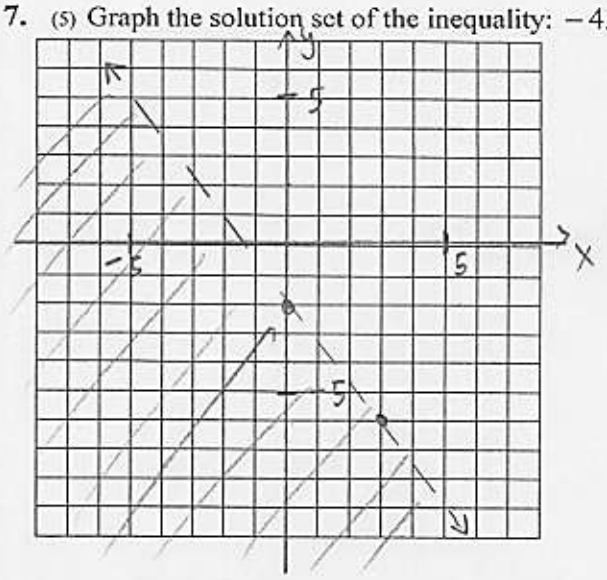
$y + 5 = 1(x + 4)$

$y + 5 = x + 4$

$5 = x - y + 4$

$1 = x - y$ //

7. (5) Graph the solution set of the inequality: $-4x-3y>6$.



$-3y > 4x + 6$

$y < \frac{4x+6}{-3}$ $\frac{}{-3}$

$y < -\frac{4}{3}x - 2$

Test (0, 0)

$-4x - 3y > 6$

$-4(0) - 3(0) > 6$

$0 > 6$

false.

8. (5) Let $f(x)=|2-x^2|$, $g(x)=3x^3+x$ and $h(x)=\frac{5x}{3x-6}$. Find

a. $f(-3)$

$= |2-(-3)^2|$

$= |2-9|$

$= |-7|$

$= 7$ //

b. $g(-1)$

$= 3(-1)^3 + (-1)$

$= -3 + (-1)$

$= -4$ //

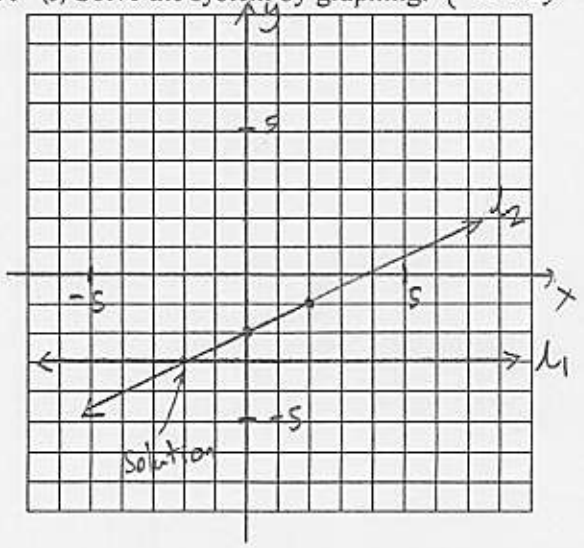
c. $h(2)$

$= \frac{5(2)}{3(2)-6}$

$= \frac{10}{0}$

= undefine. //

9. (5) Solve the system by graphing: $\begin{cases} y=-3 & \text{— } l_1 \\ -x+2y=-4 & \text{— } l_2 \end{cases}$



l_2

$-x + 2y = -4$

$2y = x - 4$

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

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

(-2, -3) //

3.5 **10.** (5) Solve by substitution: $\begin{cases} y+x=2x+2 \\ 6x-4y=21-y \end{cases}$

$$\begin{cases} -x+y=2 \\ 6x-3y=21 \end{cases}$$

$$-x+y=2$$
$$y=x+2$$
$$6x-3y=21$$
$$6x-3(x+2)=21$$
$$6x-3x-6=21$$
$$3x-6=21$$
$$3x=27$$
$$x=9$$

$$y=x+2$$
$$y=9+2$$
$$y=11$$
$$(9,11)\ //$$

6 **11.** (7) How many ounces of pure chocolate must be added to 150 oz of chocolate topping that is 50% chocolate to make a topping that is 75% chocolate?

(1)

	concentration	× Quantity	= amount
pure	1	x	1x
Type 1	0.50	150	0.50(150)
mix	0.75	x+150	0.75(x+150)

(2)
$$1x+0.50(150)=0.75(x+150)$$
$$x+75=0.75x+112.5$$
$$0.25x+75=112.5$$
$$0.25x=37.5$$
$$x=150$$

(3) need 150 oz of pure chocolate. //

12. (7) Jade invests a total of $7000 into two accounts. Account A returns 10% annually and account B returns 15% annually. If total annual return is 800, find the amount invested in each account.

①

	P	* r	* t	= I
A	x	0.10	1	0.10x
B	7000−x	0.15	1	0.15(7000−x)

②
$$0.10x + 0.15(7000 - x) = 800$$
$$0.10x + 1050 - 0.15x = 800$$
$$1050 - 0.05x = 800$$
$$-0.05x = -250$$
$$x = 5000$$

③ should invest $5000 in account A & $2000 in account B//

13. (7) Dark chocolate cost $16 per kilogram and Milk chocolate cost $6 per kilogram. How may kilograms of each were used to make a 5-kilogram mixture that costs $9 per kilogram?

①

	unit price *	Quantity =	Amount $
DC	16	x	16x
MC	6	5−x	6(5−x)
Mix	9	5	9(5)

②
$$16x + 6(5 - x) = 9(5)$$
$$16x + 30 - 6x = 45$$
$$10x + 30 = 45$$
$$10x = 15$$
$$x = 1.5$$

③ need 1.5 kg of DC and 3.5 kg of MC.