Name: _____

Student ID: _____

Exam 2

PLEASE READ ALL THE DIRECTIONS CAREFULLY

- Show all work. Solutions without proper work will receive no credit.
- Present work in a clear, organized manner.
- No notes, books, or calculators allowed.
- Write answers in <u>lowest terms</u> when appropriate
- Good Luck!



Problem	1	2	3	4	5	6	Bonus	Total
Score								
Possible	20	16	10	16	16	22	10	100

- 1. (20 points) Solve each equation for *x*
 - a. (6 points) 8(3x + 5) 9 = 9(x 2) + 14

b. (8 points) $x + \frac{2}{3}x - 2x = \frac{x}{6} - \frac{1}{8}$

c. (6 points)
$$\frac{x+7}{x-4} = \frac{5}{6}$$

- 2. (16 points) Solve the inequalities AND graph the solutions.
 - a. (8 points) $x (2x + 5) \ge 7 (4 x) + 10$

b. (8 points) $0 < -\frac{1}{2}x + 3 \le 2$

- 3. (10 points) Three sides of a triangle are x, 3x 1, 2x + 5. The perimeter of the triangle is 64 inches.
 - a. (2 points) Draw a diagram representing the triangle and the given sides.
 - b. (4 points) Find the equation for the problem.
 - c. (4 points) What are values of the triangle's three sides?

4. (16 points) For the following equations, find the x-intercept and y-intercept. Then graph the equation. Be sure to label the intercepts and lines on your graph.

a. (8 points)
$$y = -\frac{2}{3}x + 1$$

b. (8 points) 3x + 7y = -21

5. (16 points) Determine if the following sets of equations are parallel, perpendicular, or neither.

a. (8 points)
$$\begin{array}{c} 4y - x = 20\\ 2y + 4x = -6 \end{array}$$
 b. (8 points) $\begin{array}{c} 3x + 12y = 18\\ 4x + 16y = 24 \end{array}$

- 6. (22 points) Write the equation of the line in slope-intercept form given the following information.
 - a. (5 points) $(0, -2), m = \frac{4}{3}$ b. (5 points) (3, -1), m = 0

c. (6 points) (-3,4), (6,-14)

d. (6 points) (-2,4), (-2,1)

Bonus (10 points) Find three consecutive even integers such that the second added to twice the first is 18 more than the third.