

Ch. 3 Review

1. Solve the system by graphing

$$5x + 3y = 9$$

$$y = \frac{1}{3}x - 3$$

2. Solve the system using any method

$$-6 = -x + 2y$$

$$-2y + 3x = 2$$

3. Graph the system of inequalities

a. $x > 4$

$$y \geq -1$$

b. $x \geq -3$

$$x \leq 2$$

$$2x + 3y \geq 10$$

$$-4x < y$$

4. Solve the system

a. $3x + y - z = -6$

$$-x + 2y + 3z = -1$$

$$5x - 2y + 6z = 54$$

b. $-x + y - 2z = \frac{3}{2}$

$$4x - y + 5z = -6$$

$$2x + y - 2z = 6$$

5. Find the area of the triangle with the given vertices.

$$A(5,-4), B(6,3), C(8,-1)$$

6. Solve the following using Cramer's Rule

a. $2x + y = -8$

$$-5x - 2y = 13$$

Solve only for x and set up y & z

$$2x - 5y + 4z = -19$$

b.

$$4x + y + 3z = 7$$

$$x - y + 2z = -2$$

7. Use an inverse matrix to solve

a. $x + 2y = 4$

$$3x - 5y = 1$$

b. $2x + 9y = -1$

$$4x + y = 15$$

8. Stitches Inc. can make at most 30 jean jackets and 20 leather jackets in a week. It takes a worker 10 hours to make a jean jacket and 20 hours to make a leather jacket. The total number of hours by all of the employees can be no more than 500 hours per week. The profit on a jean jacket is \$20, and the profit on a leather jacket is \$50. How many of each type should be produced in order to maximize profit? What is the maximum profit?