

Name : \_\_\_\_\_

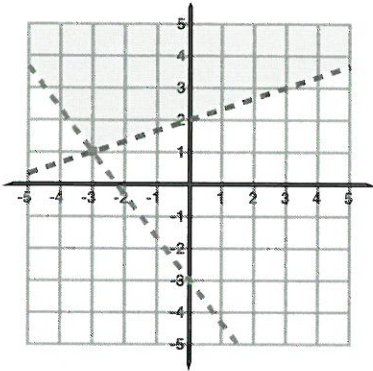
Score : \_\_\_\_\_

Teacher : \_\_\_\_\_

Date : \_\_\_\_\_

## Two Variable System of Inequalities - Graphing

1)

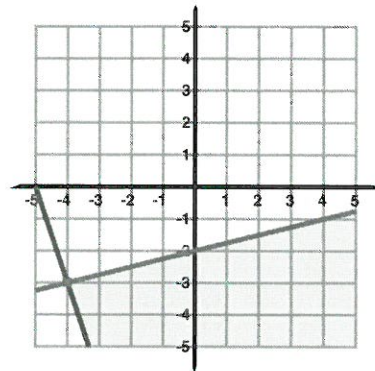


$$-x + 3y > 6$$

$$4x + 3y > -9$$

(-3,1)

2)

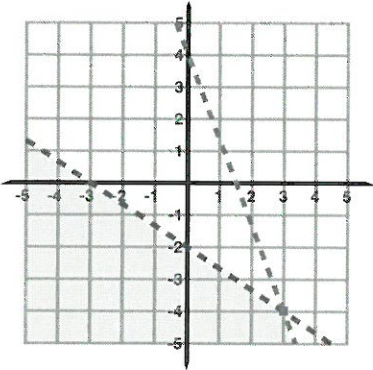


$$y \geq -3x - 15$$

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

(-4,-3)

3)

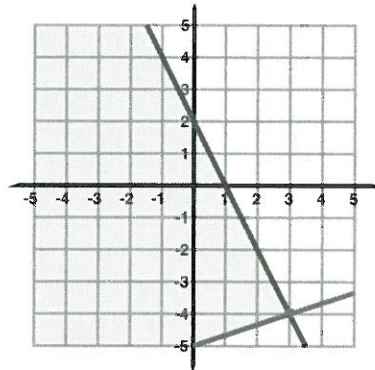


$$y < -\frac{2}{3}x - 2$$

$$y < -\frac{8}{3}x + 4$$

(3,-4)

4)

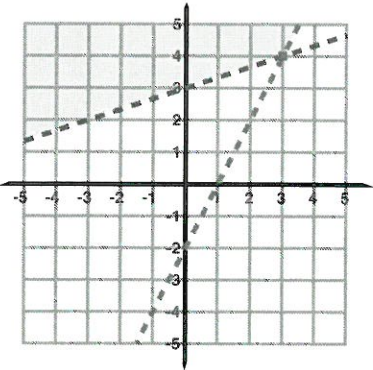


$$y \leq -2x + 2$$

$$y \geq \frac{1}{3}x - 5$$

(3,-4)

5)

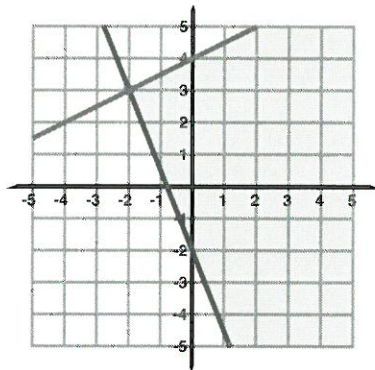


$$y > \frac{1}{3}x + 3$$

$$y > 2x - 2$$

(3,4)

6)

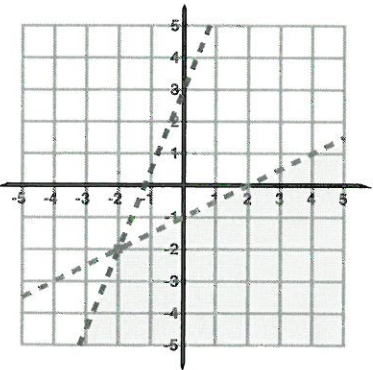


$$5x + 2y \geq -4$$

$$-x + 2y \leq 8$$

(-2,3)

7)

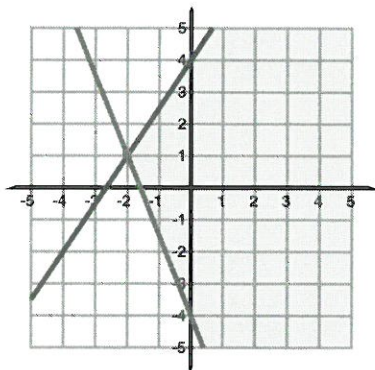


$$-5x + 2y < 6$$

$$-x + 2y < -2$$

(-2,-2)

8)



$$-3x + 2y \leq 8$$

$$5x + 2y \geq -8$$

(-2,1)

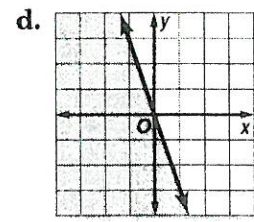
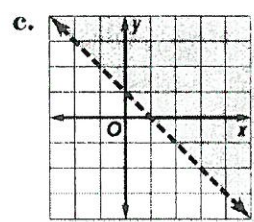
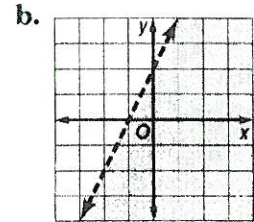
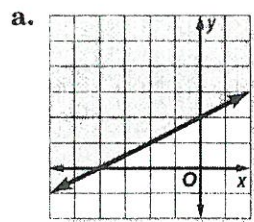


# GRADED DRILL

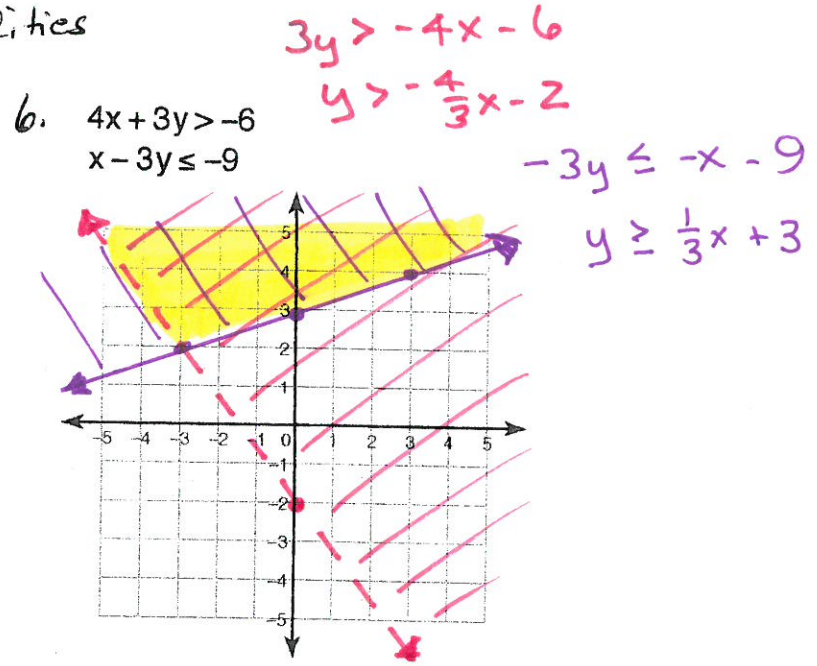
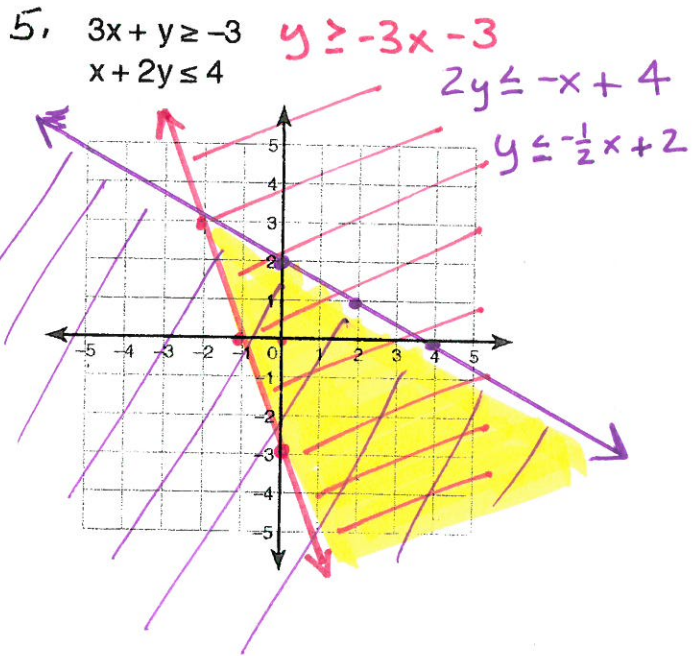
NAME \_\_\_\_\_

Match each inequality to the graph of its solution.

- 1.  $y - 2x < 2$  **B**
- 2.  $y \leq -3x$  **D**
- 3.  $2y - x \geq 4$  **A**
- 4.  $x + y > 1$  **C**



Graph each inequality/system of inequalities



Critical thinking questions:

7. State one solution to the system  
 $y < 2x - 1$   
 $y \geq 10 - x$

$(10, 5)$

8. Write a system of inequalities whose solution is the set of all points in quadrant I not including the axes.

$x > 0$   
 $y > 0$

15

1) Glitterland Gem Company produces necklaces and bracelets. The people work a maximum of 40 hours per week. The company has at most 400 gems to use. A necklace requires 40 gems and a bracelet requires 10 gems. It takes 2 hours to produce a necklace and one hour to produce a bracelet. How many of each type of jewelry can be produced in a week.

$x = \# \text{ necklaces}$   
 $y = \# \text{ bracelets}$

(a) Write a system of inequalities and graph.

$(0,0)$   
 $0 \leq 40$  ✓  
 $(20,0)$   $(0,40)$   
 $2x + y \leq 40$   
 $(10,0)$   $(0,40)$   
 $40x + 10y \leq 400$

(b) Give one solution for the system. Verify.

2  $(5,5)$

$$2(5) + 5 \leq 40$$

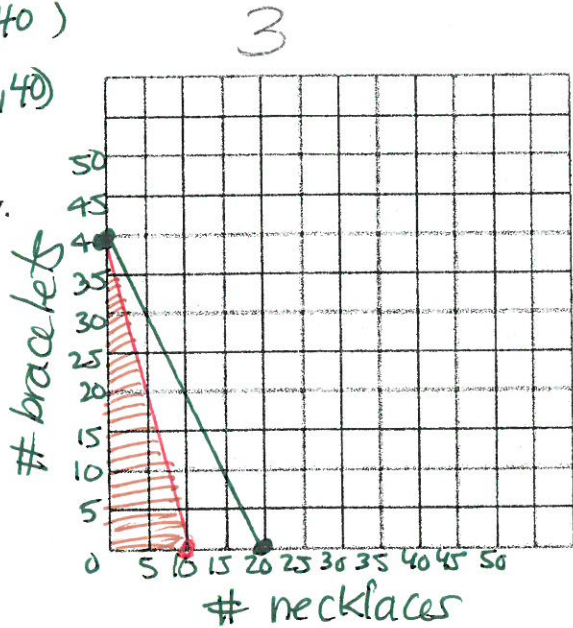
$$10 + 5 \leq 40$$

$$15 \leq 40 \quad \checkmark$$

$$40(5) + 10(5) \leq 400$$

$$200 + 50 \leq 400$$

$$250 \leq 400 \quad \checkmark$$



2) Suppose you buy flour and cornmeal in bulk to make flour tortillas and corn tortillas. Flour cost \$1.50/lb. Cornmeal costs \$2.50/lb. You want to spend less than \$15 on flour and cornmeal, and you need at least 4 lb. altogether.

$x = \# \text{ lbs flour}$   
 $y = \# \text{ lbs cornmeal}$

(a) Write a system of inequalities and graph.

$(0,0)$   
 $0 < 15$  ✓  
 $0 \geq 4$  x  
 $1.50x + 2.50y < 15$   $(10,0)$   
 $x + y \geq 4$   $(0,6)$   
 $(4,0)$   $(0,4)$

(b) Which of the following are solutions? Verify all algebraically. (flour, cornmeal)

$(1, 4)$   
 $1 + 4 \geq 4$   
 $5 \geq 4$   
 $1.50(1) + 2.50(4) < 15$   
 $1.50 + 10 < 15$   
 $11.50 < 15$

$(4, 3.5)$   
 $4 + 3.5 \geq 4$   
 $7.5 \geq 4$   
 $1.50(4) + 2.50(3.5) < 15$   
 $6 + 8.75 < 15$   
 $14.75 < 15$

$(2, 2)$   
 $2 + 2 \geq 4$   
 $4 \geq 4$   
 $1.50(2) + 2.50(2) < 15$   
 $3 + 5 < 15$   
 $8 < 15$

