

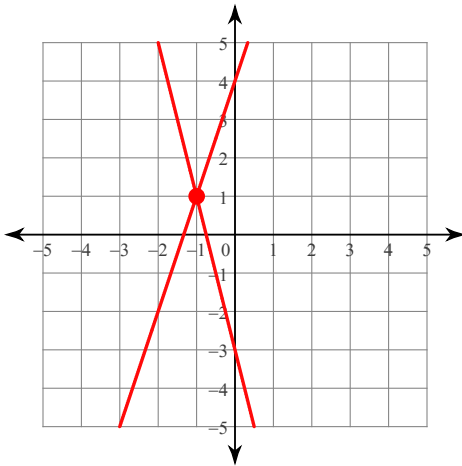
Review Chapter 8

Name _____

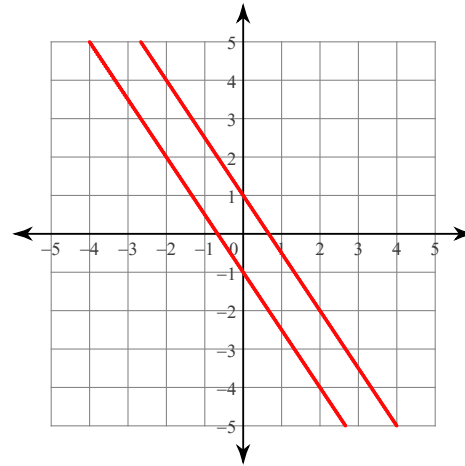
Date _____ Period _____

Solve each system by graphing and sketch the graph.

$$1) \begin{aligned} y &= 3x + 4 \\ y &= -4x - 3 \end{aligned}$$

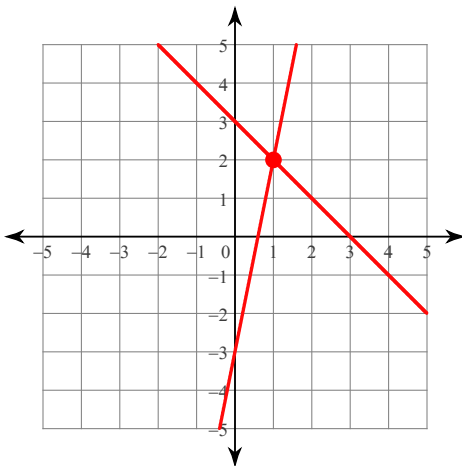
 $(-1, 1)$

$$2) \begin{aligned} y &= -\frac{3}{2}x - 1 \\ y &= -\frac{3}{2}x + 1 \end{aligned}$$

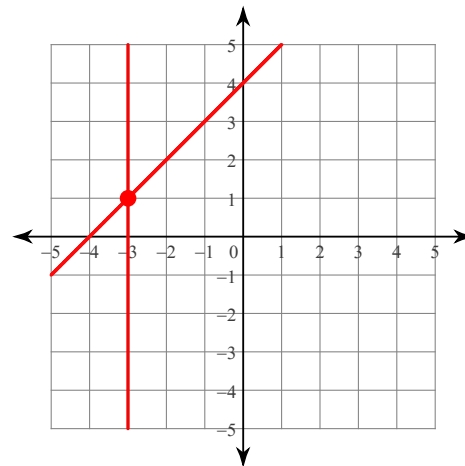


No solution

$$3) \begin{aligned} y &= 5x - 3 \\ y &= -x + 3 \end{aligned}$$

 $(1, 2)$

$$4) \begin{aligned} x &= -3 \\ x - y &= -4 \end{aligned}$$

 $(-3, 1)$

Solve each system by substitution.

5) $-5x + 2y = 32$

$y = -3x - 6$

$(-4, 6)$

6) $-6x + 12y = -18$

$y = 11x - 12$

$(1, -1)$

7) $-22x + 33y = 132$

$x + y = 34$

$(18, 16)$

8) $x + 3y = -7$

$-x - 6y = 10$

$(-4, -1)$

Solve each system by elimination.

9) $-4x - y = -12$

$4x - 2y = 12$

$(3, 0)$

10) $-3x + 2y = 6$

$3x - 4y = -12$

$(0, 3)$

11) $12x + 7y = 15$

$-6x - y = -15$

$(3, -3)$

12) $-2x + 6y = -6$

$-5x + 4y = 18$

$(-6, -3)$

Solve each system by graphing, substitution, or elimination. If appropriate, write "no solution" or "infinitely many solutions."

13) $-7x + 5y = -21$

$-x + y = -5$

$(-2, -7)$

14) $-5x + y = 8$

$15x - 3y = 5$

No solution

15) $x + 3y = -31$

$3x + 9y = -93$

Infinite number of solutions

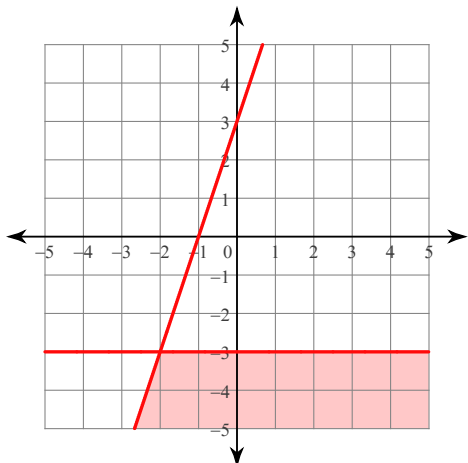
16) $8x - 4y = 0$

$-x + y = 5$

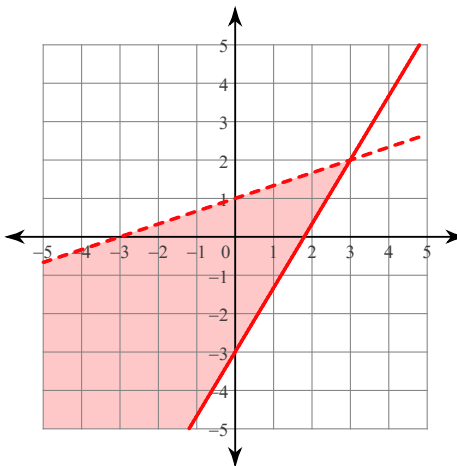
$(5, 10)$

Sketch the solution to each system of inequalities.

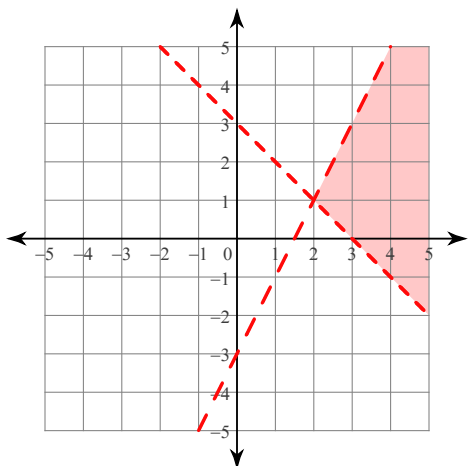
17) $y \leq -3$
 $y \leq 3x + 3$



18) $y \geq \frac{5}{3}x - 3$
 $y < \frac{1}{3}x + 1$



19) $x + y > 3$
 $2x - y > 3$



20) Is the point (2, 1) a solution to the system of inequalities in number 19?

No Way! (It is on both DOTTED lines... Not a solution)

Review Application and Extension

Use a system of linear inequalities to solve each problem. (Use a separate sheet for more room.)

1. You have a money jar containing nickels and quarters worth \$1.55. The money jar contains 11 coins. How many of each coin do you have?

a. Complete the following:

$$\begin{array}{l} \underline{N} + \underline{Q} = 11 \\ 0.05 \underline{N} + 0.25 \underline{Q} = \$1.55 \end{array}$$

(Representing the number of coins) **6 NICKELS**
 (Representing the value of the coins) **5 QUARTERS**

b. Now solve your system to answer the question!

$$\begin{array}{r} -1N - 5Q = -31 \\ \underline{N + Q = 11} \\ -4Q = -20 \\ Q = 5 \end{array} \quad N = 6$$

2. It's time for an AgeParty! Brust goes out and buys three rolls of streamers and fifteen party hats for \$30. Sully buys two rolls of streamers and 4 party hats for eleven dollars at the same store. Find the cost of streamers and the cost of party hats by solving a system of linear equations. (Hint: write one equation for Brust and one for Sully)

$$\begin{array}{r} 3S + 15H = 30 \quad \times 2 \rightarrow 6S + 30H = 60 \\ 2S + 4H = 11 \quad \times -3 \rightarrow -6S - 12H = -33 \\ \hline 18H = 27 \\ H = 1.50 \\ S = 2.50 \end{array}$$

3. An amusement park charges an admission fee plus a fee for each ride you go on. Admission plus two rides costs ten dollars. Admission plus five rides costs sixteen dollars. Find the cost of admission and the cost of a ride.

4. A clothing manufacturer wants to produce denim jeans and denim jackets. Each pair of jeans requires two yards of denim and takes 0.25 hr to make. Each jacket requires 3 yards of denim and takes 0.5 hr to make. The manufacturer has 800 yards of denim and 120 hours to spend making jeans and jackets.

Let $x = \#$ of pairs of jeans and $y = \#$ pairs of jackets.

a. Explain each inequality in the context of this problem.

$x = \#$ of pairs of jeans	$y = \#$ of jackets	
$2x + 3y \leq 800$	$2 \text{ yds per jean} + 3 \text{ yds per Jacket} \leq 800 \text{ total yds}$	
$0.25x + 0.5y \leq 120$	$.25 \text{ hrs} + .5 \text{ hrs} \leq 120 \text{ total hrs}$	
$x \geq 0$	Can't have negative jeans	
$y \geq 0$	" " " jackets	