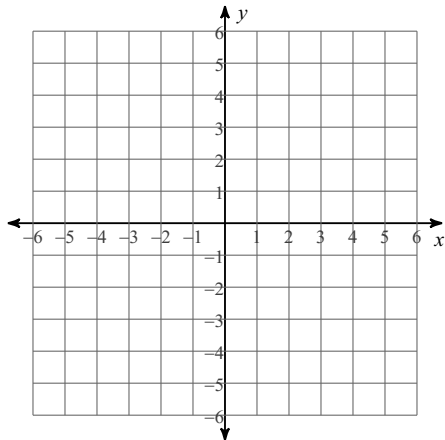


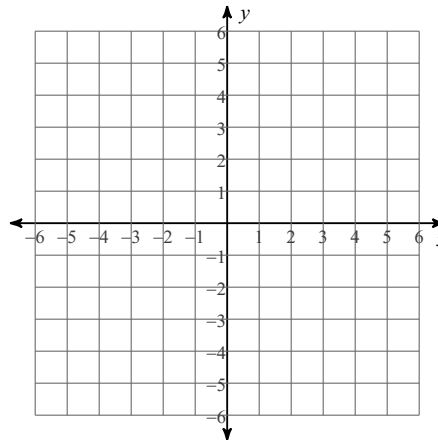
## Study Guide--Systems of Linear Equations and Inequalities

Sketch the graph of each line.

1)  $5x - 4y = 12$



2)  $x = -4$



Find the slope of each line.

3)  $y = -5$

4)  $5x + 4y = 8$

Find the slope of the line through each pair of points.

5)  $(9, 14), (-13, -14)$

6)  $(9, -19), (9, 8)$

Write the slope-intercept form of the equation of the line described.

7) Slope =  $\frac{4}{3}$ , y-intercept =  $-4$

8) through:  $(3, 2)$ , slope =  $\frac{1}{3}$

9) through:  $(4, 5)$  and  $(2, 2)$

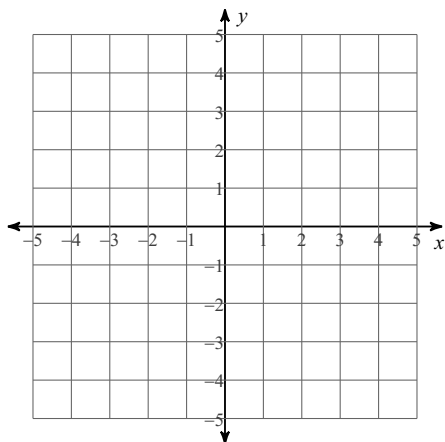
10) through:  $(2, 1)$ , parallel to  $y = 2x - 1$

11) through:  $(-2, -4)$ , perp. to  $y = -\frac{1}{3}x + 4$

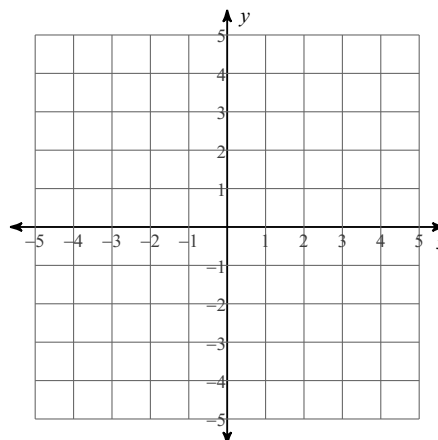
**Solve each system by graphing.**

12)  $y = -\frac{5}{4}x - 4$

$y = -\frac{5}{4}x - 2$



13)  $2x + y = 4$   
 $x + 4y = -12$



**Solve each system by substitution.**

14)  $5x + y = 13$   
 $-7x - 3y = -7$

15)  $4x - 5y = 16$   
 $x - y = 3$

**Solve each system by elimination.**

16)  $-6x - 9y = 24$   
 $-2x + 3y = -16$

17)  $-16x - 10y = 22$   
 $8x + 5y = -11$

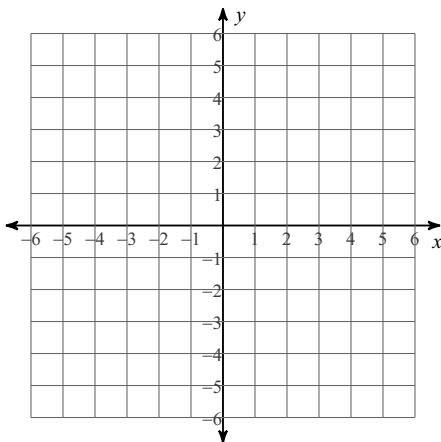
Solve the system using the method you prefer.

$$\begin{aligned} 18) \quad &4x - 3y = -24 \\ &x - y = -5 \end{aligned}$$

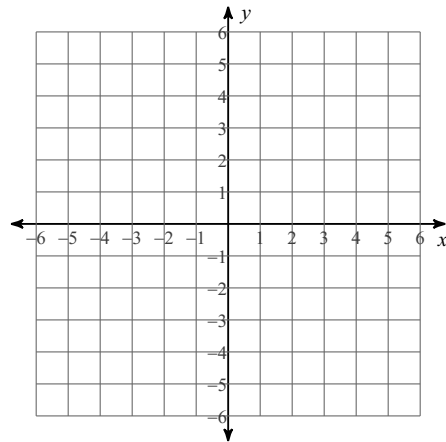
$$\begin{aligned} 19) \quad &-3x + y = -1 \\ &-12x + 4y = 8 \end{aligned}$$

Sketch the graph of each linear inequality.

$$20) \quad y > \frac{1}{5}x - 5$$

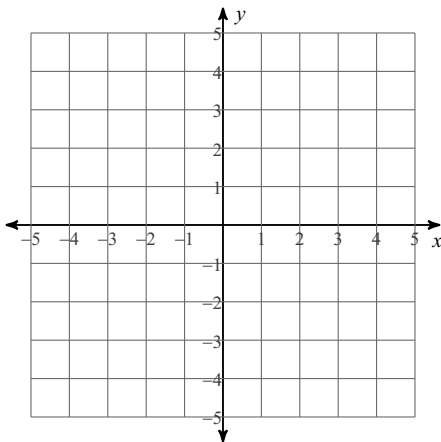


$$21) \quad 3x + 2y \leq 2$$

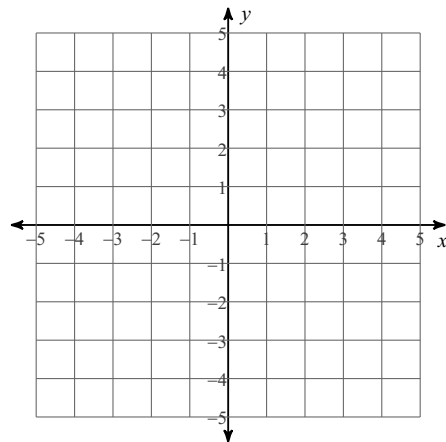


Sketch the solution to each system of inequalities.

$$\begin{aligned} 22) \quad &y > 3x + 2 \\ &y \geq -x - 2 \end{aligned}$$



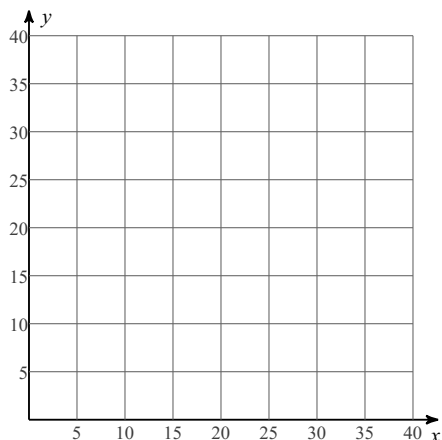
$$\begin{aligned} 23) \quad &3x + y \leq -3 \\ &x + 2y > 4 \end{aligned}$$



- 24) The water park is a popular field trip destination. This year the senior class at High School A and the senior class at High School B both planned trips there. The senior class at High School A rented and filled 7 vans and 12 buses with 636 students. High School B rented and filled 4 vans and 4 buses with 232 students. Each van and each bus carried the same number of students. How many students can a van carry? How many students can a bus carry?
- 25) Mike and Jimmy are selling cookie dough for a school fundraiser. Customers can buy packages of sugar cookie dough and packages of oatmeal cookie dough. Mike sold 6 packages of sugar cookie dough and 5 packages of oatmeal cookie dough for a total of \$124. Jimmy sold 12 packages of sugar cookie dough and 14 packages of oatmeal cookie dough for a total of \$304. Find the cost each of one package of sugar cookie dough and one package of oatmeal cookie dough.

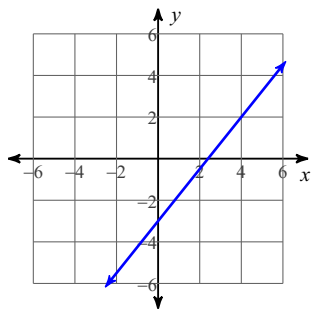
**Write the system of inequalities that model this information**

- 26) Hillary needs markers and poster board for a project. The markers are \$0.79 each and the poster board is \$1.89 per sheet. She needs at least 4 sheets of poster board. Hillary has \$15 to spend on project materials.
- 27) A company makes backpacks and briefcases. Daily output cannot exceed a total of 40 backpacks and briefcases. A maximum of 20 backpacks can be made in one day. The maximum daily output of briefcases is 30. Show all possible combinations of backpacks and briefcases. List two possible solutions.

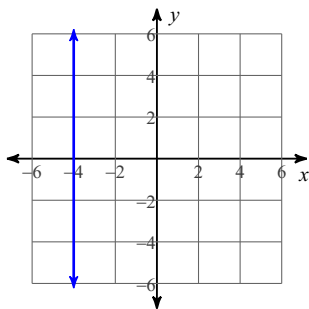


# Answers to Study Guide--Systems of Linear Equations and Inequalities (ID: 1)

1)



2)



3) 0

4)  $-\frac{5}{4}$

5)  $\frac{14}{11}$

6) Undefined

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

8)  $y = \frac{1}{3}x + 1$

9)  $y = \frac{3}{2}x - 1$

10)  $y = 2x - 3$

11)  $y = 3x + 2$

12) No solution

13)  $(4, -4)$

14)  $(4, -7)$

15)  $(-1, -4)$

16)  $(2, -4)$

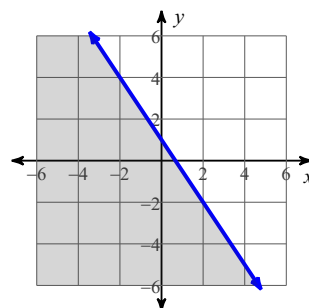
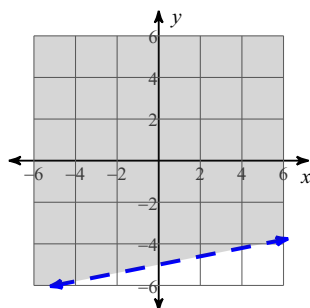
17) Infinite number of solutions

18)  $(-9, -4)$

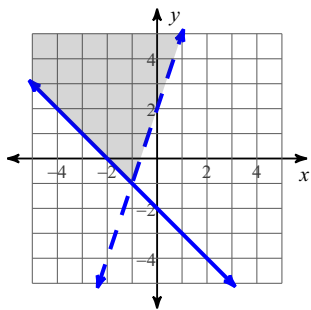
19) No solution

20)

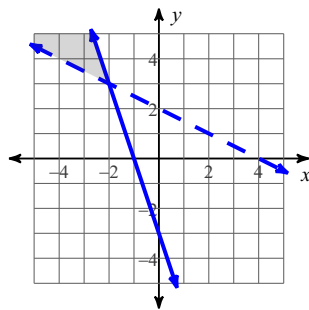
21)



22)



23)



24) Van: 12, Bus: 46

25) package of sugar cookie dough: \$9, package of oatmeal cookie dough: \$14

26)  $p \geq 4$ ,  $0.79m + 1.89p \leq 15$

27)