

## Accelerated Algebra/Geometry A

### Unit 2: Reasoning with Linear Equations and Inequalities

#### Unit 2A: Literal Equations and System of Equations

Aug. 26 *Solving Literal Equations*

Classwork: page 1 Homework: finish page 1

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Aug. 29 *Solving Literal Equations*

Classwork: page 2 Homework: finish page 2

Aug. 30 *Solving Systems of equations by graphing and substitution*

Classwork: pages 3-8 Homework: finish 3-8

Aug. 31 *Solving Systems of Equations Elimination*

Classwork: page 9 Homework: pages 10-11

Sept. 1 **QUIZ**

*Graphing Linear Inequalities*

Classwork: pages 12 Homework: page 13

Sept. 2 *Solving Systems of Inequalities*

Classwork: pages 14-15 Homework: pages 16-17

Sept. 5 Happy Labor Day!!!! No School ☺

Sept. 6 *Solving Systems of Equations Word Problems*

Classwork/homework: pages 18-20

Sept. 7 *Solving Systems of Equations Word Problems*

Classwork/homework: pages 21-22

Sept. 8 TEST Review

Classwork/homework: pages 23-25

Sept. 9 **TEST**

Sept. 12 linear programming????

# LITERAL EQUATIONS WORKSHEET

Solve for the indicated variable in the parenthesis ON A SEPARATE SHEET OF PAPER!

1)  $P = IRT$  (T)

2)  $A = 2(L + W)$  (W)

3)  $y = 5x - 6$  (x)

4)  $2x - 3y = 8$  (y)

5)  $\frac{x+y}{3} = 5$  (x)

6)  $y = mx + b$  (b)

7)  $ax + by = c$  (y)

8)  $A = h(b + c)$  (b)

9)  $V = LWH$  (L)

10)  $A = 4r^2$  ( $r^2$ )

11)  $V = \pi r^2 h$  (h)

12)  $7x - y = 14$  (x)

13)  $A = \frac{x+y}{2}$  (y)

14)  $R = \frac{E}{I}$  (I)

15)  $x = \frac{yz}{6}$  (z)

16)  $A = \frac{r}{2L}$  (L)

17)  $A = \frac{a+b+c}{3}$  (b)

18)  $12x - 4y = 20$  (y)

19)  $x = \frac{2y-z}{4}$  (z)

20)  $P = \frac{R-C}{N}$  (R)

# MAKING PRACTICE FUN 17

Formulas

For use after Lesson 3-8

NAME \_\_\_\_\_

DATE \_\_\_\_\_

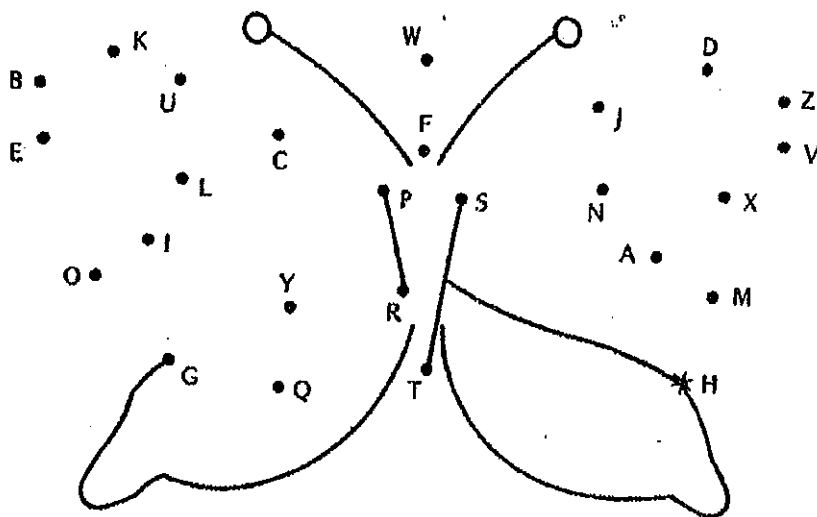
## Dot-To-Dot Puzzle

1. Work each exercise.
2. Find the dot letter for that answer.
3. Connect the dot letters in order.

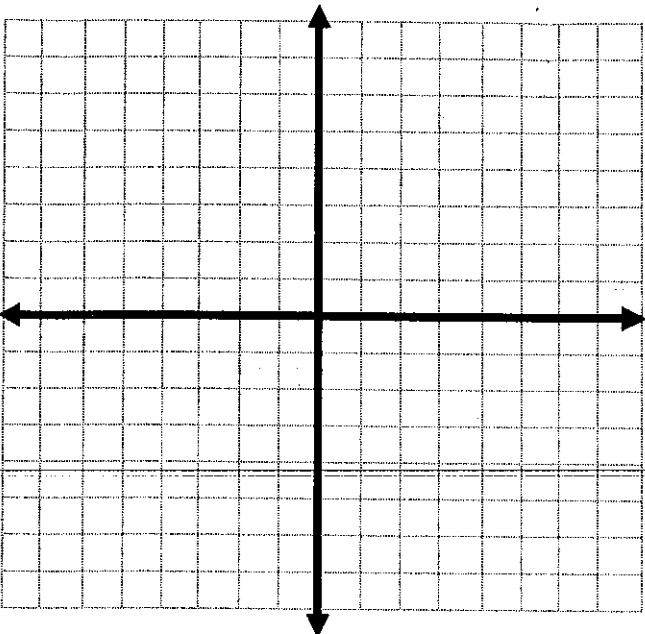
### Exercises

Solve for the indicated letter.

- |  |   |
|--|---|
| 1. $F = ma$ for $a$ $a = \frac{F}{m}$ H        | 12. $V = \frac{\pi R^2 h}{3}$ for $h$   |
| 2. $A = l \cdot w$ for $w$                     | 13. $P = 2l + 2w$ for $w$               |
| 3. $F = \frac{mv^2}{r}$ for $v^2$              | 14. $C = \frac{5}{9}(F - 32)$ for $F$   |
| 4. $W = F \cdot S$ for $F$                     | 15. $R = \frac{l}{pT}$ for $l$          |
| 5. $E = m \cdot g \cdot h$ for $g$             | 16. $h = \frac{3P}{w}$ for $w$          |
| 6. $E = mc^2$ for $m$                          | 17. $S = 2l(w + h) + 2wh$ for $l$       |
| 7. $D = \frac{M}{V}$ for $V$                   | 18. $V = \frac{\pi R^2 h}{3}$ for $R^2$ |
| 8. $A = \frac{(h_1 + h_2) \cdot h}{2}$ for $h$ | 19. $S = Vt + \frac{1}{2}at^2$ for $a$  |
| 9. $E = IR$ for $R$                            | 20. $L = \frac{3MP^2}{Q}$ for $P^2$     |
| 10. $P = I^2 R$ for $R$                        | 21. $F = \frac{mM}{R^2}$ for $R^2$      |
| 11. $P = I^2 R$ for $I^2$                      | 22. $F = \frac{mM}{R^2}$ for $M$        |



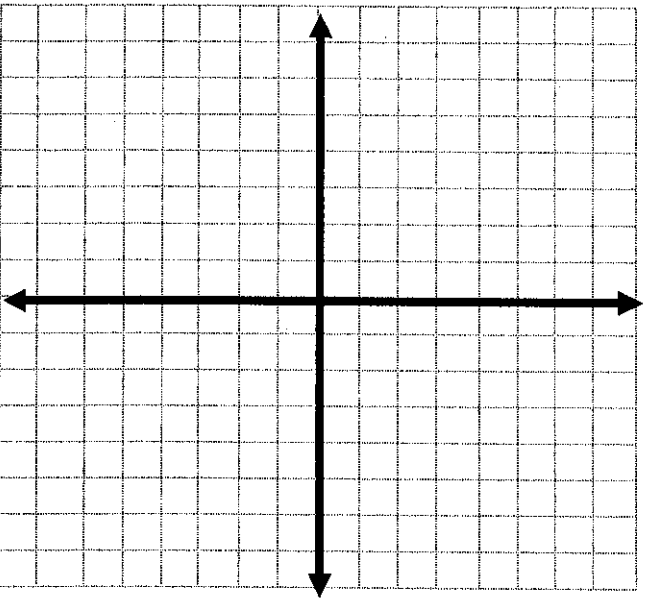
Dot Letter	Answer
A	$\frac{F \cdot l}{m}$
B	PRT
C	$\frac{3V}{\pi R^2}$
D	$\frac{M}{D}$
E	$\frac{3P}{h}$
F	$\frac{P}{l^2}$
G	$\frac{2(S - Vt)}{t^2}$
H	$\frac{E}{m}$
I	$\frac{(S - 2wh)}{2(w + h)}$
J	$\frac{2A}{(h_1 + h_2)}$
K	$\frac{9}{5}C + 32$
L	$\frac{3h}{P}$
M	$\frac{A}{l}$
N	$\frac{D}{M}$
O	$\frac{3V}{\pi h}$
P	$\frac{P}{R}$
Q	$\frac{m}{FM}$
R	$\frac{mM}{F}$
S	$\frac{E}{l}$
T	$\frac{FR^2}{m}$
U	$\frac{(P - 2l)}{2}$
V	$\frac{E}{mh}$
W	$\frac{l}{E}$
X	$\frac{W}{S}$
Y	$\frac{lQ}{3M}$
Z	$\frac{E}{c^2}$



Equation 1  
 $y = 2$

Equation 2  
 $x = -3$

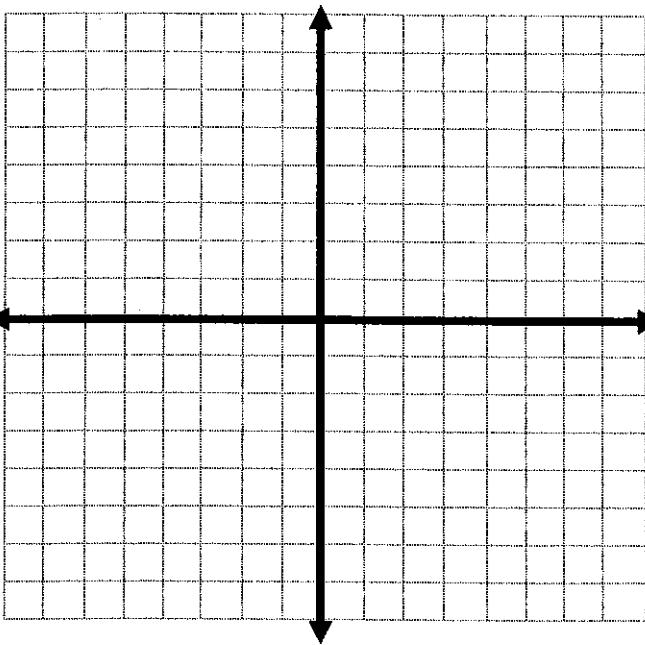
Solution: \_\_\_\_\_



Equation 1  
 $2y + 3x = -6$

Equation 2  
 $2y + x = 2$

Solution: \_\_\_\_\_



Equation 1  
 $y = 3x + 4$

Equation 2  
 $y = -x + 4$

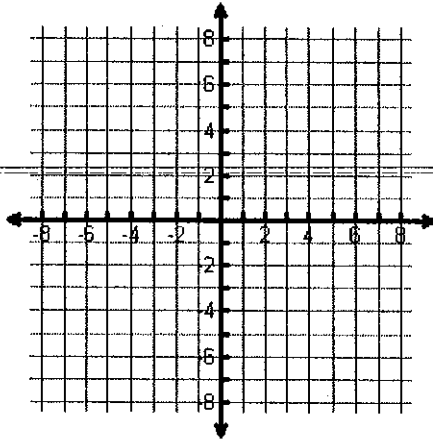
Solution: \_\_\_\_\_

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

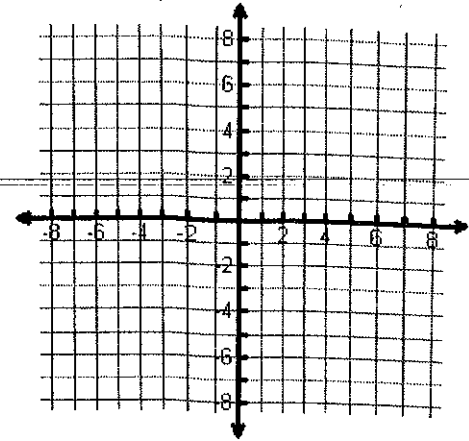
# Systems of Linear Equations

Graph the system to find your solution.

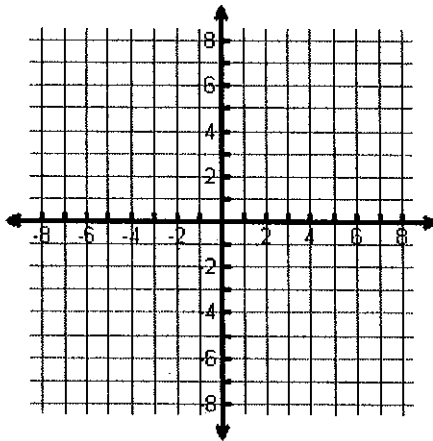
1.  $y = 3x - 4$   
 $y = -3x + 2$



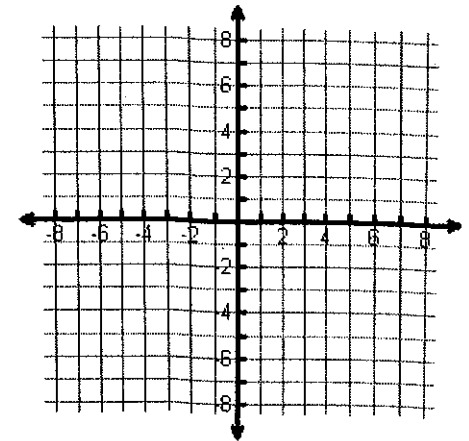
2.  $y = \frac{4}{3}x + 3$   
 $y = -\frac{2}{3}x - 3$



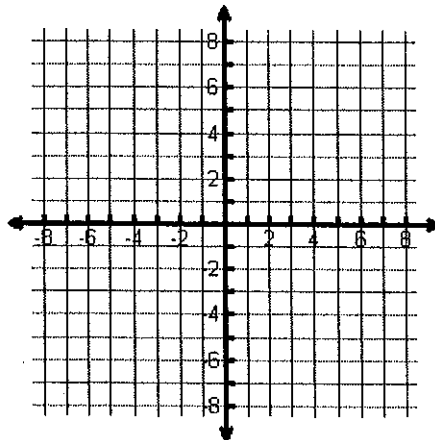
3.  $y = \frac{5}{4}x - 2$   
 $y = \frac{5}{4}x - 1$



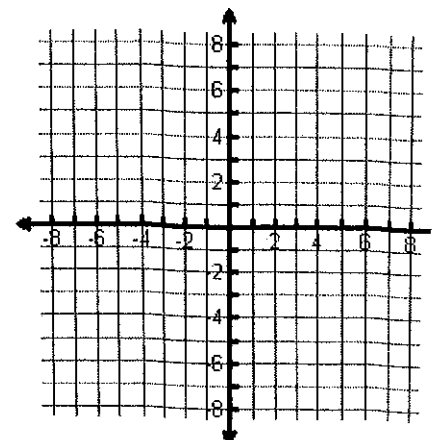
4.  $y = \frac{1}{3}x + 2$   
 $y = -x - 2$



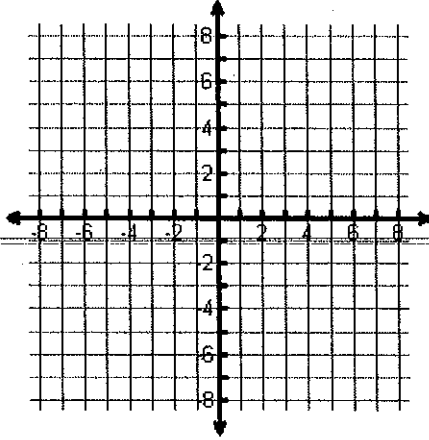
5.  $y = -\frac{3}{2}x - 4$   
 $y = \frac{1}{2}x + 4$



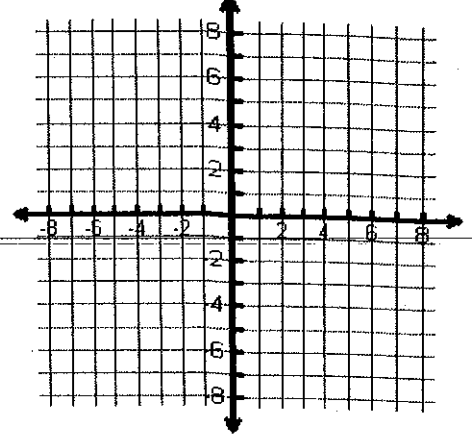
6.  $y = 4x - 1$   
 $y = -x + 4$



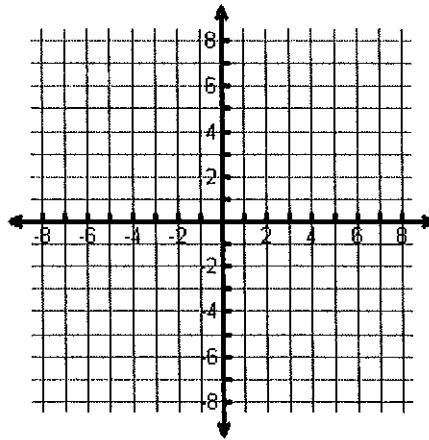
7.  $y = \frac{3}{4}x + 1$   
 $y = -\frac{1}{2}x - 4$



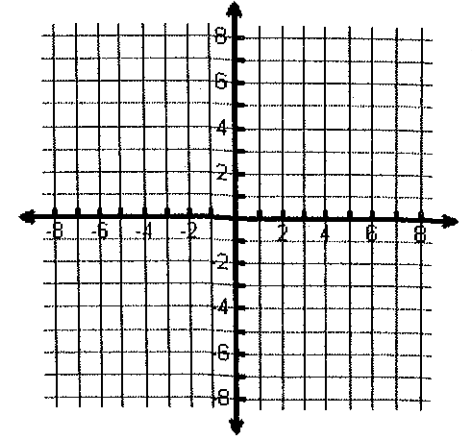
8.  $2y + 3x = -6$   
 $2y + x = 2$



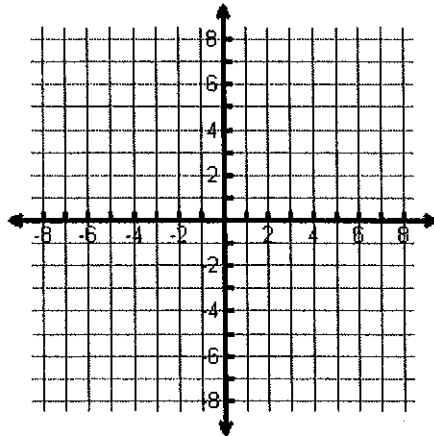
9.  $-x + y = -4$   
 $x + y = 2$



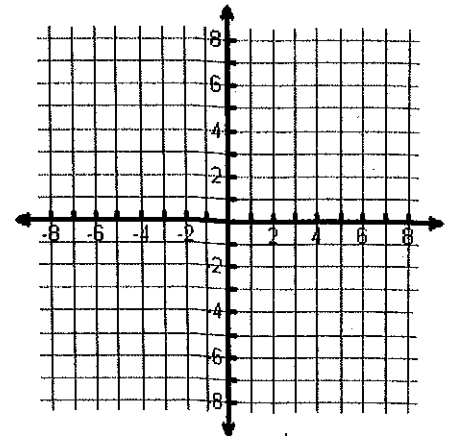
10.  $y - 3x = 4$   
 $x + y = 4$



11.  $y = -x + 1$   
 $x = -3$



12.  $y = -4$   
 $x = 2$



## Solving Systems of Equations by Substitution

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

Solve each system by Substitution. Write the solution in the blank.

\_\_\_\_\_ 1.  $y = 2x$   
 $2x + 3y = -8$

\_\_\_\_\_ 2.  $y = x + 7$   
 $2x + 3y = 31$

\_\_\_\_\_ 3.  $x = 4y$   
 $3x - 10y = -14$

\_\_\_\_\_ 4.  $x = -y + 4$   
 $4x + y = 1$

\_\_\_\_\_ 5.  $x = 2y - 25$   
 $3x - y = 0$

\_\_\_\_\_ 6.  $7x + 4y = 5$   
 $x = 6y - 19$

## Solving Systems of Equations by Substitution

**Solve each system by substitution.**

1)  $y = 6x - 11$   
 $-2x - 3y = -7$

2)  $2x - 3y = -1$   
 $y = x - 1$

3)  $y = -3x + 5$   
 $5x - 4y = -3$

4)  $-3x - 3y = 3$   
 $y = -5x - 17$

5)  $y = -2$   
 $4x - 3y = 18$

6)  $y = 5x - 7$   
 $-3x - 2y = -12$

7)  $-4x + y = 6$   
 $-5x - y = 21$

8)  $-7x - 2y = -13$   
 $x - 2y = 11$

9)  $-5x + y = -2$   
 $-3x + 6y = -12$

10)  $-5x + y = -3$   
 $3x - 8y = 24$



$$\begin{aligned} 11) \quad x + 3y &= 1 \\ -3x - 3y &= -15 \end{aligned}$$

$$\begin{aligned} 12) \quad -3x - 8y &= 20 \\ -5x + y &= 19 \end{aligned}$$

$$\begin{aligned} 13) \quad -3x + 3y &= 4 \\ -x + y &= 3 \end{aligned}$$

$$\begin{aligned} 14) \quad -3x + 3y &= 3 \\ -5x + y &= 13 \end{aligned}$$

$$\begin{aligned} 15) \quad 6x + 6y &= -6 \\ 5x + y &= -13 \end{aligned}$$

$$\begin{aligned} 16) \quad 2x + y &= 20 \\ 6x - 5y &= 12 \end{aligned}$$

$$\begin{aligned} 17) \quad -3x - 4y &= 2 \\ 3x + 3y &= -3 \end{aligned}$$

$$\begin{aligned} 18) \quad -2x + 6y &= 6 \\ -7x + 8y &= -5 \end{aligned}$$

$$\begin{aligned} 19) \quad -5x - 8y &= 17 \\ 2x - 7y &= -17 \end{aligned}$$

$$\begin{aligned} 20) \quad -2x - y &= -9 \\ 5x - 2y &= 18 \end{aligned}$$

We already know how to solve many systems of linear equations. The system below cannot be solved quickly by any of the methods we have learned, but we can change it into a system that's easy to solve. All we have to do is use the Multiplication Principle to multiply both sides of the first equation by 2.

$$5x + 4y = 14$$

$$3x - 2y = 26$$

$\xrightarrow{\times 2}$

$$5x + 4y = 14$$

$$6x - 4y = 52$$

$$11x + 0 = 66$$

$$11x = 66$$

$$x = 6$$

$$5 \cdot 6 + 4y = 14$$

$$30 + 4y = 14$$

$$4y = -16$$

$$y = -4$$

I can make this  $-4y$  if I multiply by 2.

The solution is  $(6, -4)$ .

Replace each system of equations below with an equivalent system which you could solve by addition or subtraction. You don't need to solve the system.

$$7x + 6y = 2$$

$$2x - 3y = 10$$

$$7x + 6y = 2$$

$$4x - 6y = 20$$

$$3x + 5y = 26$$

$$2x - y = 13$$

$-3y$  times 2 equals  $-6y$ .

$$3x + 4y = 11$$

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

$$x - 2y = -12$$

$$3x + 8y = 34$$

$$4x + 3y = 7$$

$$2x - 9y = 35$$

$$2x + 3y = 0$$

$$6x - 5y = -28$$

$$7x - 3y = 37$$

$$2x - y = 12$$

$$5x - 4y = 10$$

$$3x - 2y = 6$$

$$x + y = 10$$

$$15x + 28y = 176$$

$$x + 2y = 21$$

$$9x + 24y = 243$$

$$x - y = 2$$

$$31x + 44y = 812$$

$$x + y = 20$$

$$60x + 75y = 1260$$

9

## Solving Systems of Equations by Elimination

**Solve each system by elimination.**

1) 
$$\begin{aligned} -4x - 2y &= -12 \\ 4x + 8y &= -24 \end{aligned}$$

2) 
$$\begin{aligned} 4x + 8y &= 20 \\ -4x + 2y &= -30 \end{aligned}$$

3) 
$$\begin{aligned} x - y &= 11 \\ 2x + y &= 19 \end{aligned}$$

4) 
$$\begin{aligned} -6x + 5y &= 1 \\ 6x + 4y &= -10 \end{aligned}$$

5) 
$$\begin{aligned} -2x - 9y &= -25 \\ -4x - 9y &= -23 \end{aligned}$$

6) 
$$\begin{aligned} 8x + y &= -16 \\ -3x + y &= -5 \end{aligned}$$

7) 
$$\begin{aligned} -6x + 6y &= 6 \\ -6x + 3y &= -12 \end{aligned}$$

8) 
$$\begin{aligned} 7x + 2y &= 24 \\ 8x + 2y &= 30 \end{aligned}$$

9) 
$$\begin{aligned} 5x + y &= 9 \\ 10x - 7y &= -18 \end{aligned}$$

10) 
$$\begin{aligned} -4x + 9y &= 9 \\ x - 3y &= -6 \end{aligned}$$

11) 
$$\begin{aligned} -3x + 7y &= -16 \\ -9x + 5y &= 16 \end{aligned}$$

12) 
$$\begin{aligned} -7x + y &= -19 \\ -2x + 3y &= -19 \end{aligned}$$

$$\begin{aligned} 13) \quad & 16x - 10y = 10 \\ & -8x - 6y = 6 \end{aligned}$$

$$\begin{aligned} 14) \quad & 8x + 14y = 4 \\ & -6x - 7y = -10 \end{aligned}$$

$$\begin{aligned} 15) \quad & -4x - 15y = -17 \\ & -x + 5y = -13 \end{aligned}$$

$$\begin{aligned} 16) \quad & -x - 7y = 14 \\ & -4x - 14y = 28 \end{aligned}$$

$$\begin{aligned} 17) \quad & -7x - 8y = 9 \\ & -4x + 9y = -22 \end{aligned}$$

$$\begin{aligned} 18) \quad & 5x + 4y = -30 \\ & 3x - 9y = -18 \end{aligned}$$

$$\begin{aligned} 19) \quad & -4x - 2y = 14 \\ & -10x + 7y = -25 \end{aligned}$$

$$\begin{aligned} 20) \quad & 3x - 2y = 2 \\ & 5x - 5y = 10 \end{aligned}$$

$$\begin{aligned} 21) \quad & 5x + 4y = -14 \\ & 3x + 6y = 6 \end{aligned}$$

$$\begin{aligned} 22) \quad & 2x + 8y = 6 \\ & -5x - 20y = -15 \end{aligned}$$

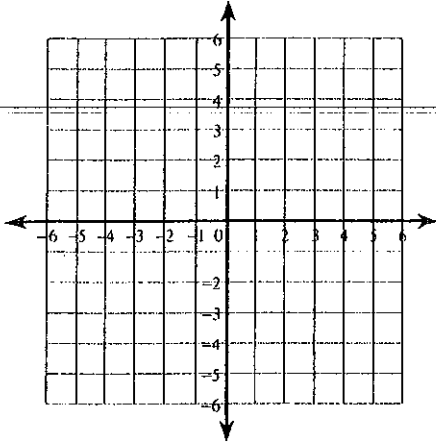
$$\begin{aligned} 23) \quad & -14 = -20y - 7x \\ & 10y + 4 = 2x \end{aligned}$$

$$\begin{aligned} 24) \quad & 3 + 2x - y = 0 \\ & -3 - 7y = 10x \end{aligned}$$

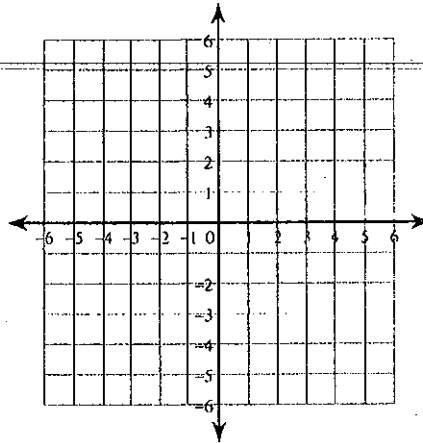
# Graphing Linear Inequalities

Sketch the graph of each linear inequality.

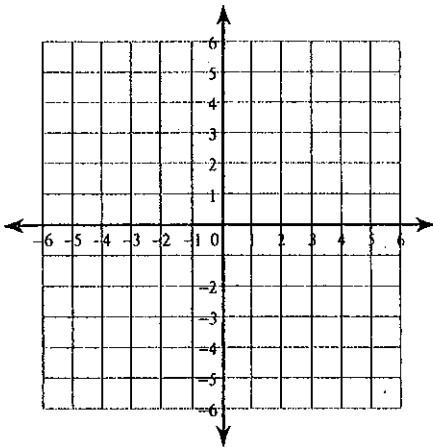
1)  $y \geq -2x - 2$



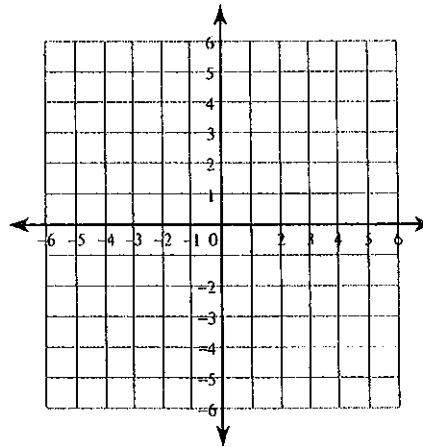
2)  $y \leq -\frac{1}{3}x + 1$



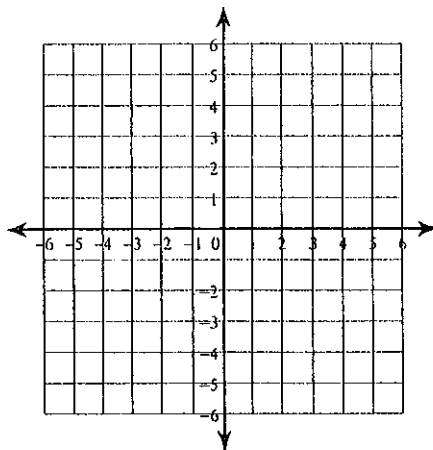
3)  $x \geq -2$



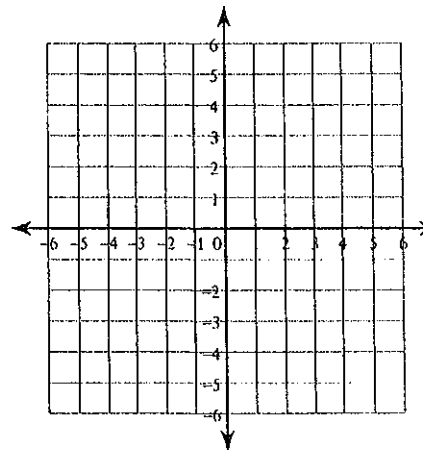
4)  $y < x - 2$



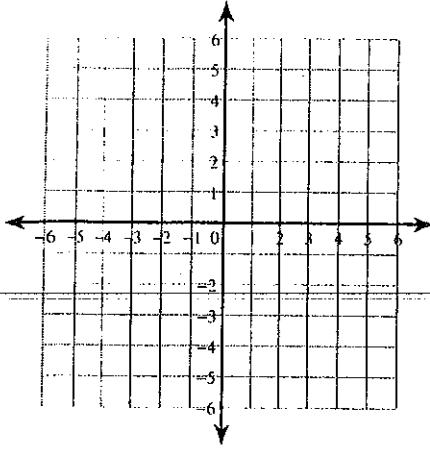
5)  $y \geq x - 2$



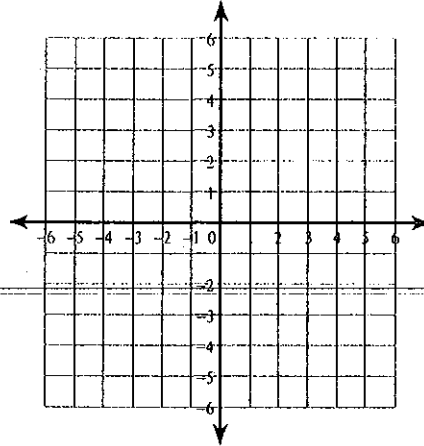
6)  $y < 6x + 1$



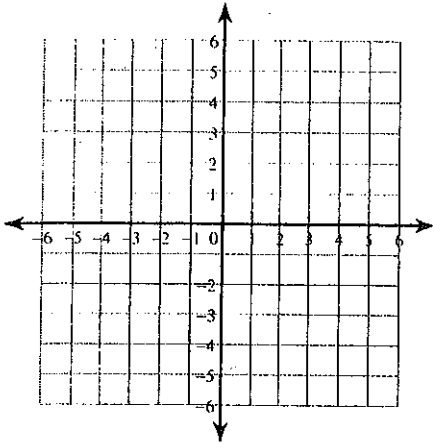
7)  $5x - y \geq 5$



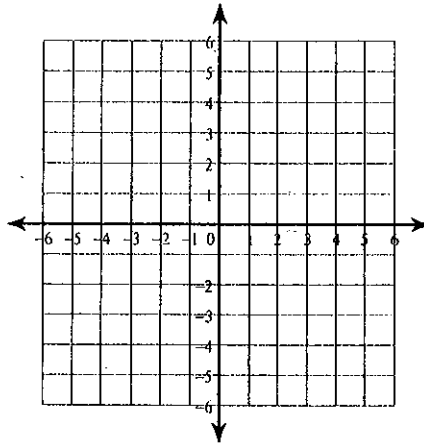
8)  $x + 3y \geq 3$



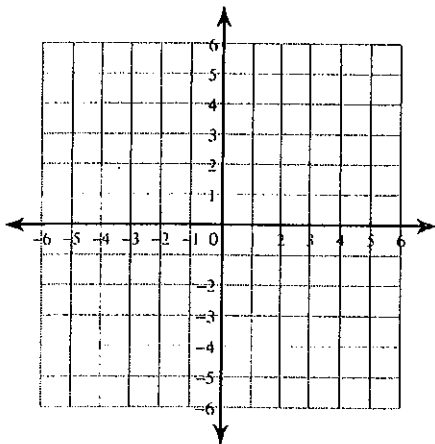
9)  $y \geq 5$



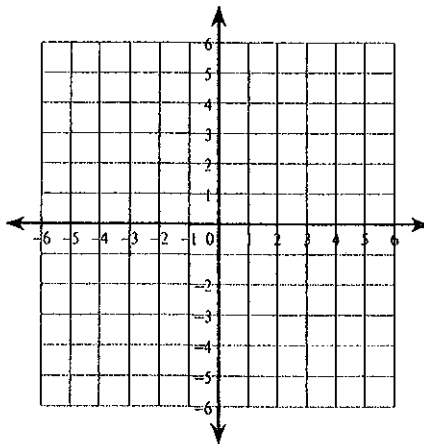
10)  $2x - 5y \leq 10$



11)  $8x - 3y \leq 12$



12)  $x - y \geq 0$



**Critical thinking questions:**

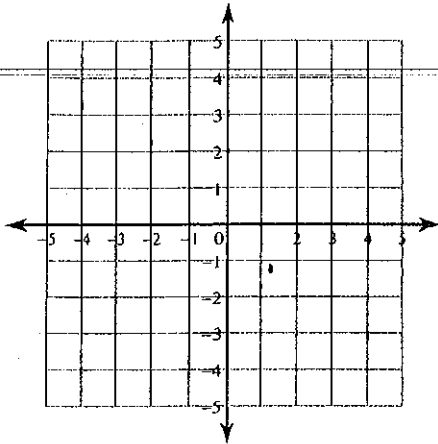
13) Name one particular solution to #11

14) Can you write a linear inequality whose solution contains only points with positive  $x$ -values and positive  $y$ -values? Why or why not?

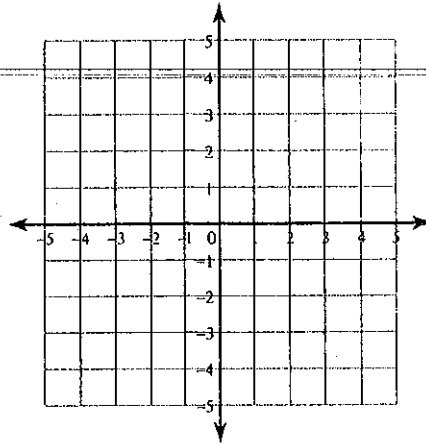
Systems of Inequalities

Sketch the solution to each system of inequalities.

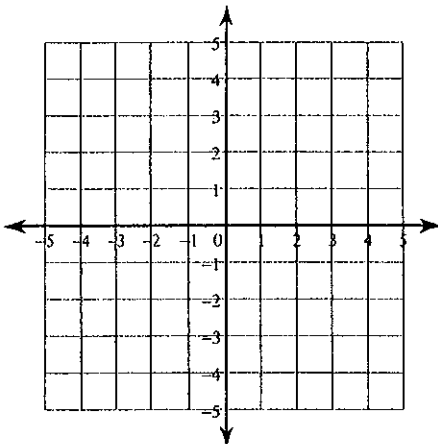
1)  $y > 4x - 3$   
 $y \geq -2x + 3$



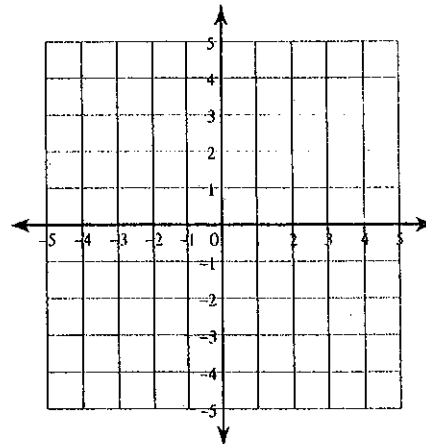
2)  $y \geq -5x + 3$   
 $y > -2$



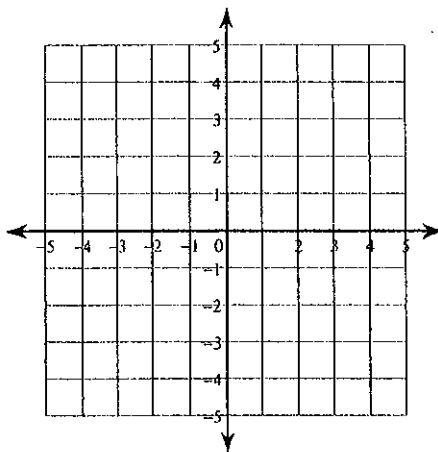
3)  $y < 3$   
 $y \leq -x + 1$



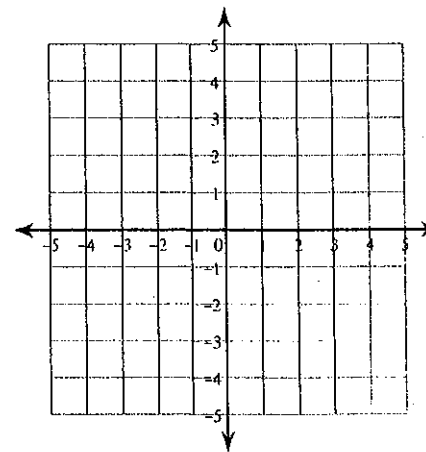
4)  $y \geq x - 3$   
 $y \geq -x - 1$



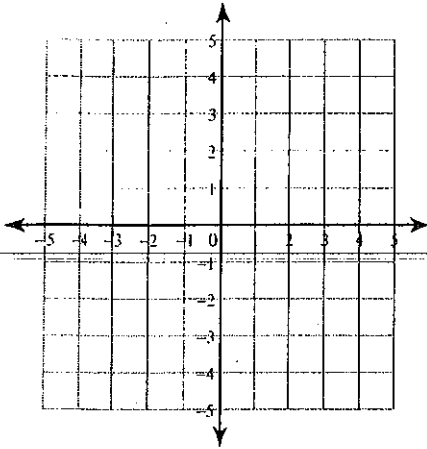
5)  $x \leq -3$   
 $5x + 3y \geq -9$



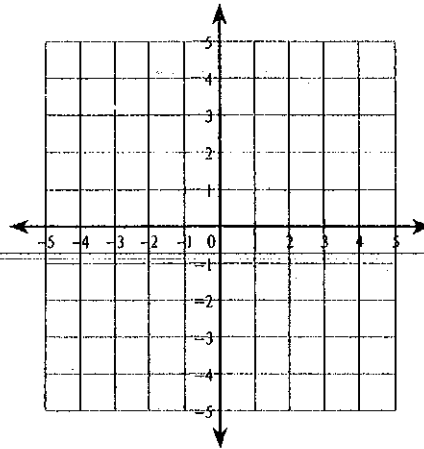
6)  $4x - 3y < 9$   
 $x + 3y > 6$



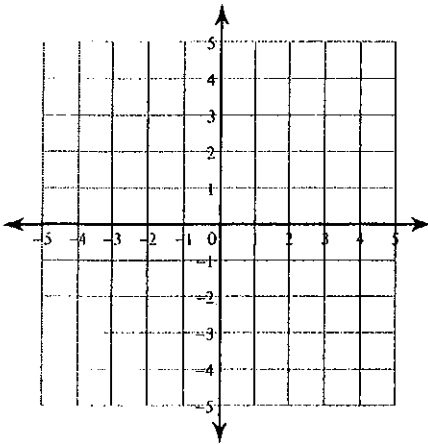
7)  $x + y > 2$   
 $2x - y > 1$



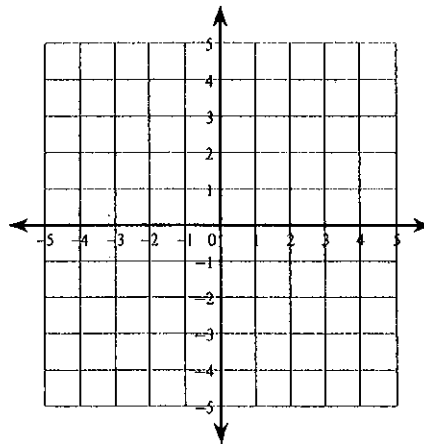
8)  $x + y \geq 2$   
 $4x + y \geq -1$



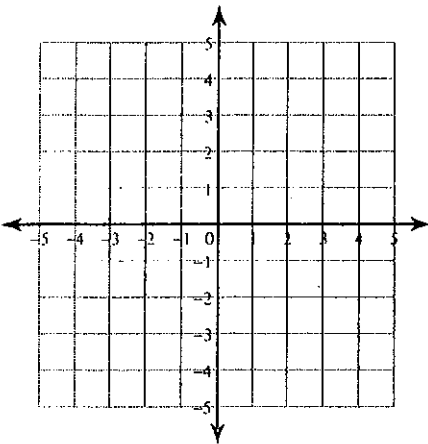
9)  $4x + 3y > -6$   
 $x - 3y \leq -9$



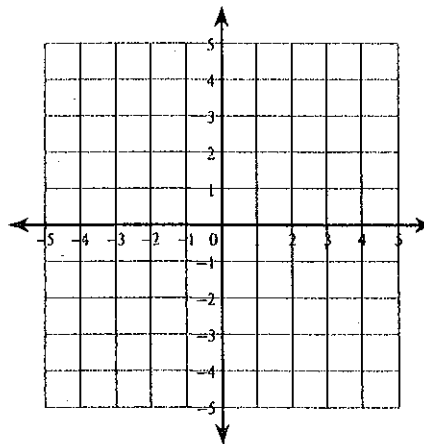
10)  $y < -2$   
 $x + y \geq 1$



11)  $3x + y \geq -3$   
 $x + 2y \leq 4$



12)  $x + y \geq -3$   
 $x + y \leq 3$



**Critical thinking questions:**

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

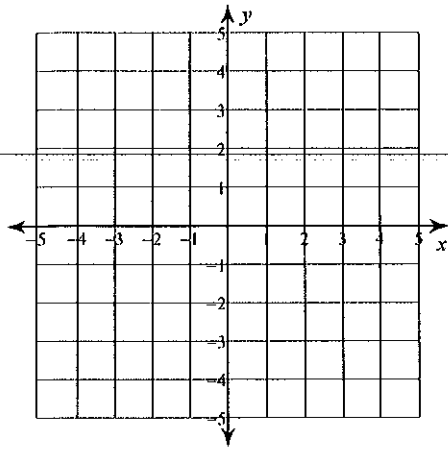
14) Write a system of inequalities whose solution is the set of all points in quadrant I not including the axes.



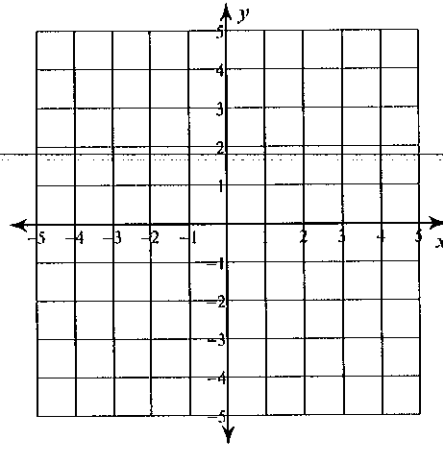
# Solving Systems of Inequalities

Sketch the solution to each system of inequalities.

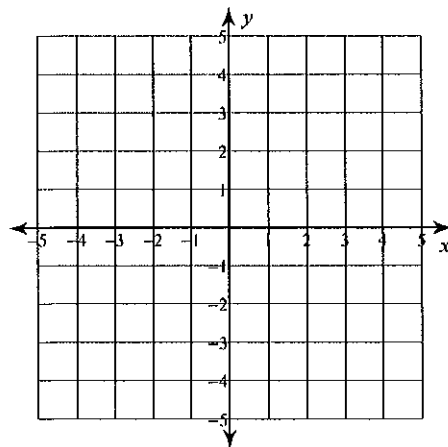
1)  $y \leq -x - 2$   
 $y \geq -5x + 2$



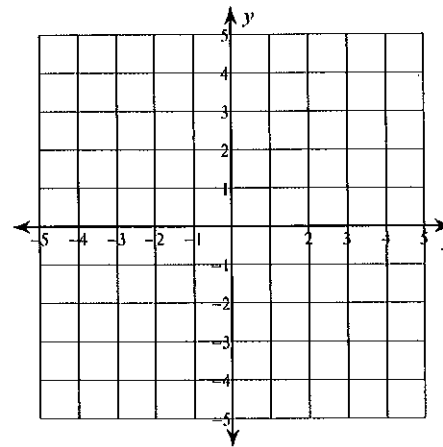
2)  $y > -x - 2$   
 $y < -5x + 2$



3)  $y \leq \frac{1}{2}x + 2$   
 $y < -2x - 3$

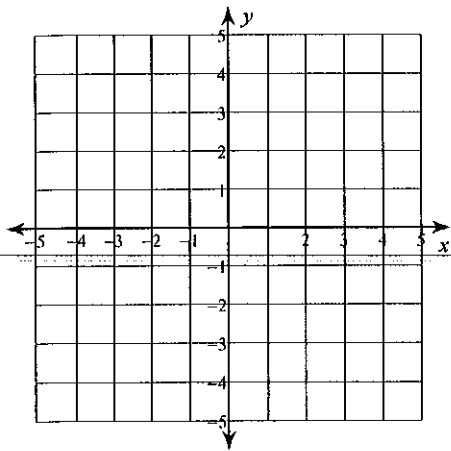


4)  $x \leq -3$   
 $y < \frac{5}{3}x + 2$



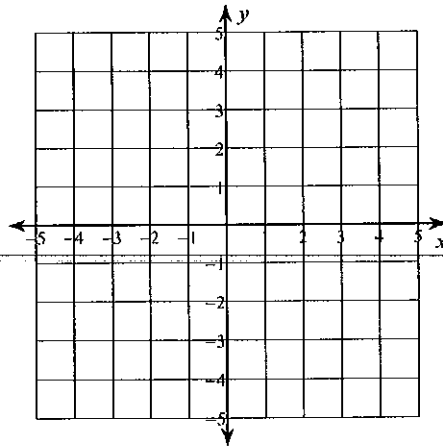
$$5) y \leq -\frac{5}{2}x - 2$$

$$y < -\frac{1}{2}x + 2$$



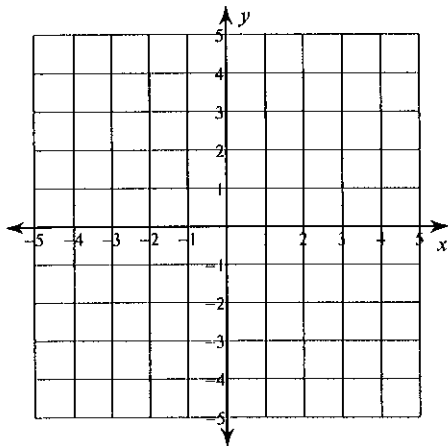
$$6) y \geq \frac{2}{3}x + 3$$

$$y > -\frac{4}{3}x - 3$$



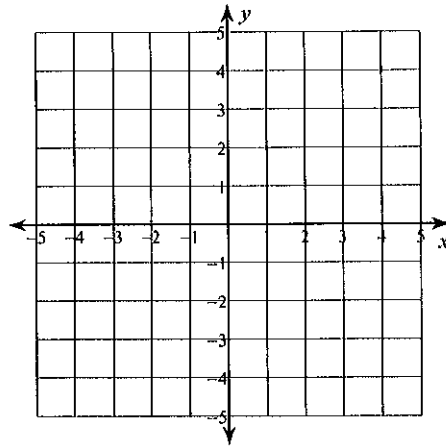
$$7) 4x + y < 2$$

$$y > -2$$



$$8) 3x + 2y \geq -2$$

$$x + 2y \leq 2$$



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

## Systems of Linear Equations – Word Problems

### 4-Step Method:

1. Define variables
2. Write the system of equations
3. Solve showing all steps
4. State your solution in sentence form

1. You sell tickets for admission to your school play and collect a total of \$104. Admission prices are \$6 for adults and \$4 for children. You sold 21 tickets. How many adult tickets and how many children tickets did you sell?
2. Your family goes to a restaurant for dinner. There are 6 people in your family. Some order the chicken dinner for \$14.80 and some order the steak dinner for \$17. If the total bill was \$91, how many people ordered each type of dinner?
3. You bought the meat for Saturday's cookout. A package of hot dogs cost \$1.60 and a package of hamburger cost \$5. You bought a total of 8 packages of meat and you spent \$23. How many packages of hamburger meat did you buy?
4. Casey orders 3 pizzas and 2 orders of breadsticks for a total of \$29.50. Rachel orders 2 pizzas and 3 orders of breadsticks for a total of \$23. How much does a pizza cost?
5. Rent-A-Car rents compact cars for a fixed amount per day plus a fixed amount for each mile driven. Benito rented a car for 6 days, drove it 550 miles, and spent \$337. Lisa rented the same car for 3 days, drove it 350 miles, and spend \$185. What is the charge per day and the charge per mile for the compact car?
6. Beach Hotel in Cancun is offering two weekend specials. One includes a 2-night stay with 3 meals and cost \$195. The other includes a 3-night stay with 5 meals and cost \$300. What is the cost of a single meal?

7. You and your friend go to a Mexican restaurant. You order 2 tacos and 2 enchiladas. Your friend orders 3 tacos and 1 enchilada. Your bill was \$4.80. Your friend's bill was \$4.00. What was the price of an enchilada?
8. For a community bake sale, you purchases 12 pounds of sugar and 15 pounds of flour. Your total cost was \$9.30. The next day, you purchased 4 pounds of sugar and 10 pounds of flour. Your total cost the second day was \$4.60. Find the cost of a pound of sugar and a pound of flour.
9. A travel agency offers different getaways to New York. Plan A includes hotel accommodations for 3-nights and 2-pair of baseball tickets for \$645. Plan B includes hotel accommodations for 5-nights and 4-pairs of baseball tickets for \$1135. How much does a single hotel cost and how much does a single pair of baseball tickets cost?
10. Tickets for the theater are \$5 for the balcony and \$10 for the orchestra. If 600 tickets were sold and the total receipts were \$4750, how many tickets of each type were sold?
11. You bought 5 pairs of socks for \$19. The wool socks you bought cost \$5 per pair. The cotton socks you bought cost \$3 per pair. How many of each type of sock did you buy?
12. A sporting good store sells right-handed and left-handed baseball gloves. In one month, 12 gloves were sold for a total revenue of \$528. Right-handed gloves cost \$48 and left-handed gloves cost \$36. How many right-handed gloves were sold?



- 7) The state fair 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 8 vans and 8 buses with 240 students. High School B rented and filled 4 vans and 1 bus with 54 students. Every van had the same number of students in it as did the buses. Find the number of students in each van and in each bus.
- 
- 8) The senior classes at High School A and High School B planned separate trips to New York City. The senior class at High School A rented and filled 1 van and 6 buses with 372 students. High School B rented and filled 4 vans and 12 buses with 780 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?
- 9) Brenda's school is selling tickets to a spring musical. On the first day of ticket sales the school sold 3 senior citizen tickets and 9 child tickets for a total of \$75. The school took in \$67 on the second day by selling 8 senior citizen tickets and 5 child tickets. What is the price each of one senior citizen ticket and one child ticket?
- 10) Matt and Ming are selling fruit for a school fundraiser. Customers can buy small boxes of oranges and large boxes of oranges. Matt sold 3 small boxes of oranges and 14 large boxes of oranges for a total of \$203. Ming sold 11 small boxes of oranges and 11 large boxes of oranges for a total of \$220. Find the cost each of one small box of oranges and one large box of oranges.
- 11) A boat traveled 336 miles downstream and back. The trip downstream took 12 hours. The trip back took 14 hours. What is the speed of the boat in still water? What is the speed of the current?

## **Linear Inequalities in Context**

(Graph the inequality as you would an equation. Test a coordinate on the line, below & above the line: if the coordinate on the line is not a solution, dash the line, otherwise make it solid; whichever coordinate above or below the line is a solution, shade that side of the line.)

- 1) The x-axis represents the # of nickels. The y-axis represents the # of dimes. You have more than 4 nickels. Write an inequality and graph the solution.
- 2) The x-axis represent the # of nickels. The y-axis represents the # of dimes. You have less than 4 dimes. Write an inequality and graph the solution.
- 3) Tickets for a concert cost either \$10 or \$20. Karen plans on spending no more than \$240 on tickets. Write an inequality and graph the solution.
- 4) Jessica is selling two types of notebooks. She knows that one type of notebook is much more popular with students than the other. She prices the popular notebook so that she will make a \$3 profit on each sale. To help sell the other notebook, she prices it cheaply and expects to lose \$1 on each sale. Jessica does not want to lose any money. Write an inequality and graph the solution.
- 5) Tickets for the annual talent show are \$3 for adults and \$2 for students. In order to cover the expenses for the show, the school must make more than \$600. Write an inequality and graph the solution.
- 6) You must spend less than \$12 on fruit for a meeting. Grapes cost \$1 per pound and peaches cost \$1.50 per pound. Write an inequality and graph the solution.
- 7) In the last quarter of a football game, your team is behind by 21 points. A field goal is worth 3 points and a touchdown (with the point after touchdown) is 7 points. Write an inequality and graph a solution showing how your team could tie or win the game.
- 8) With 2 minutes left in a basketball game, your team is 12 points behind. They can score 2-point or 3-point shots. Write an inequality and graph a solution showing what your team could score and still not win or tie.

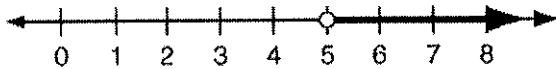
**Multiple choice.**

- \_\_\_\_\_ 1. Which inequality represents the situation “at least 160 cats are in the kennel”?
- A.  $c > 160$                       B.  $c < 160$   
C.  $c \geq 160$                       D.  $c \leq 160$

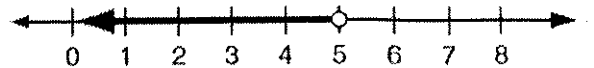
- \_\_\_\_\_ 2. Mrs. Nelson is buying folding chairs that are on sale for \$10. If she has \$50, which inequality can be solved to show the number of chairs  $c$  she can buy?
- A.  $10 + c > 50$                       B.  $10 - c < 50$   
C.  $10c \geq 50$                       D.  $10c \leq 50$

- \_\_\_\_\_ 3. Which graph represents  $x \geq 5$ ?

A.



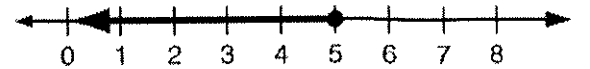
B.



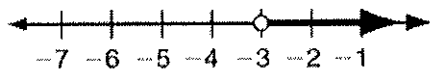
C.



D.



- \_\_\_\_\_ 4. Which of the following inequalities represents the graph?



- A.  $x \geq -3$                       B.  $x > -3$   
C.  $x \leq -3$                       D.  $x < -3$

- \_\_\_\_\_ 5. Tia’s car needs repairs. Honest Harry will charge \$70 per hour plus \$130 for the part. Lucky Lou will charge \$80 per hour plus \$40 for the part. How long is the job if the two costs are the same?
- A. 5 hr                      B. 17 hr  
C. 9 hr                      D. 20 hr

- \_\_\_\_\_ 6. How many solutions does the given system have?

$$\begin{cases} y = 2x + 1 \\ -4x + 2y = 2 \end{cases}$$

- A. none                      B. exactly two  
C. exactly one                      D. infinitely many



7. Which describes a system with exactly one solution?

- A. consistent and independent
- C. inconsistent

- B. consistent and dependent
- D. dependent

8. Which describes a system with no solutions?

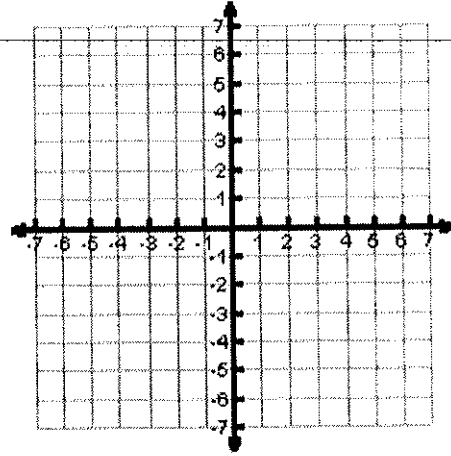
- A. consistent and independent
- C. inconsistent

- B. consistent and dependent
- D. dependent

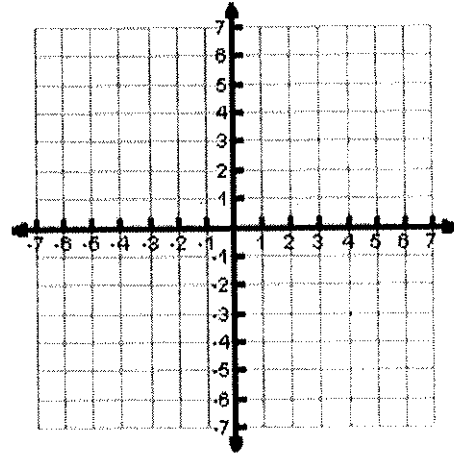
Graph the following system. Label each line. Clearly indicate solution.

9. 
$$\begin{cases} x + 3y = 15 \\ 3x - 2y = 12 \end{cases}$$

Solution \_\_\_\_\_



10. 
$$\begin{cases} x + y \geq 2 \\ x - 3y > 9 \end{cases}$$



11. Tell whether  $(-5, -6)$  is a solution of  $\begin{cases} x - 2y = 7 \\ y - x = -1 \end{cases}$ . Justify your answer.

11. \_\_\_\_\_

Solve the following systems. Show all work.

12. 
$$\begin{cases} 2x + 5y = 19 \\ -3x + 4y = 29 \end{cases}$$

12. \_\_\_\_\_

13. 
$$\begin{cases} 7x - y = 52 \\ 2y = x - 26 \end{cases}$$

13. \_\_\_\_\_

14. 
$$\begin{cases} -9x + y = -83 \\ 17x - y = 155 \end{cases}$$

14. \_\_\_\_\_

15. A test has twenty-five questions worth 70 points. True/False questions are worth 2 points each and multiple choice questions are worth 4 points each. How many of each are there? Show all work. You must show equations.

True/False \_\_\_\_\_

Multiple Choice \_\_\_\_\_

16. Jasmine and her sister are saving to buy MP3 players. Jasmine has \$50 and plans to save \$10 per week. Her sister has \$80 and plans to \$7 per week. In how many weeks will they have saved the same amount? Show all work, you must show equations.

16. \_\_\_\_\_

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