

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?

Name: _____ Solving Systems of Equations

Date: _____

1. Tickets to a movie cost \$11 for adults and \$7 for students. A group of friends purchased 8 tickets for \$76. Write a system of equations to represent the situation. How many adult tickets and student tickets were purchased?

X= _____

Y= _____

2. For senior night, the volleyball team sold 850 tickets for the big game. If it costs \$5 for pre-sale tickets and \$9 for tickets at the door, how many of each type were sold after the school raised a total of \$6,050?

X= _____

Y= _____

3. Phillip collects two kinds of baseball cards (Topps and Fleer). The first kind (Topps) is worth \$5.50 each. The second kind (Fleer) is worth \$3.90 each. If he has 46 cards altogether, and they are worth a total of \$209.80, how many of each kind are there?

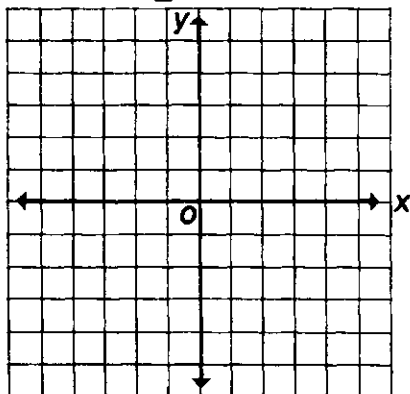
X= _____

Y= _____

Why Did the Three Pigs Leave Home?

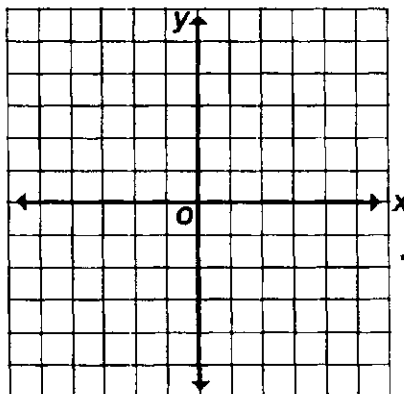
Graph each inequality below. Circle the letter of the statement that correctly describes the location of the graph. Print this letter in each box at the bottom of page 31 that contains the number of the exercise.

① $y \geq \frac{1}{2}x - 3$



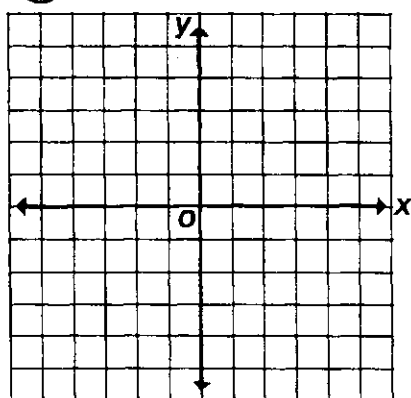
- D Quadrants I, II, IV;
includes boundary line.
- E All four quadrants;
includes boundary line.
- I Quadrants I, III, IV;
excludes boundary line.

② $x + y > 1$



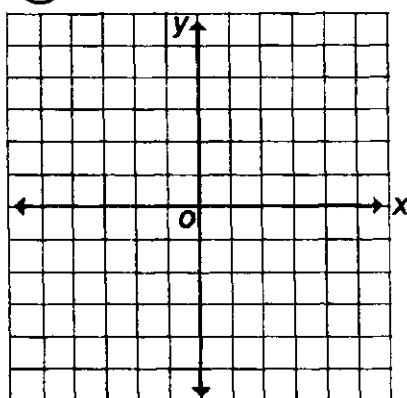
- S Quadrants I, II, IV;
excludes boundary line.
- B All four quadrants;
includes boundary line.
- F Quadrants I, III, IV;
excludes boundary line.

③ $y \leq 2x - 2$



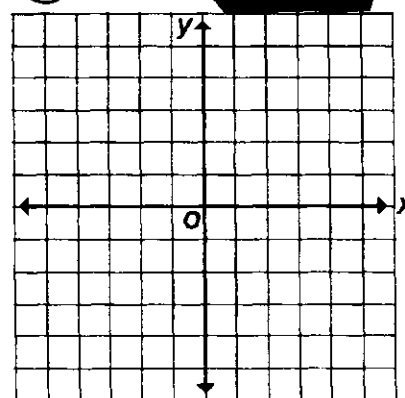
- L Quadrants I, II, IV;
includes boundary line.
- T Quadrants I, III, IV;
includes boundary line.
- V All four quadrants;
excludes boundary line.

④ $3x + 2y < 6$



- C Quadrants II, III, IV;
excludes boundary line.
- M Quadrants I, II, IV;
includes boundary line.
- O All four quadrants;
excludes boundary line.

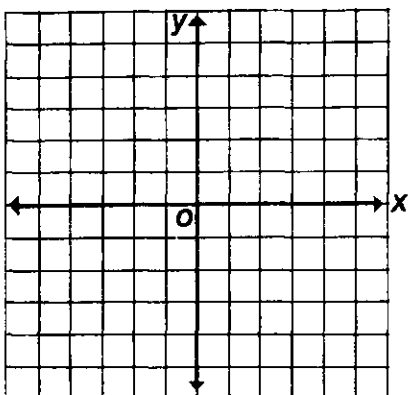
⑤ $y \geq 2$



- R All four quadrants;
excludes boundary line.
- U Quadrants II, III;
includes boundary line.
- H Quadrants I, II;
includes boundary line.



⑥ $x < -3$

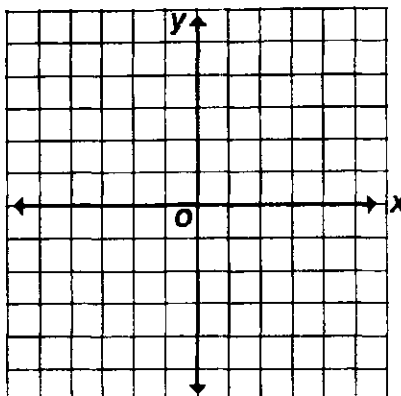


L Quadrants I, II;
excludes boundary line.

W Quadrants II, III;
excludes boundary line.

G Quadrants I, III;
excludes boundary line.

⑦ $2x - 3y \leq 12$

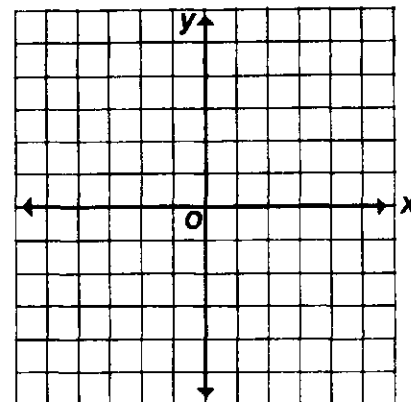


K Quadrants I, III, IV;
excludes boundary line.

U Quadrants II, III, IV;
includes boundary line.

I All four quadrants;
includes boundary line.

⑧ $5x + 3y < x + 6$

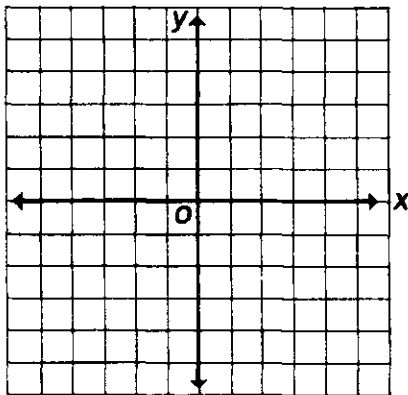


F All four quadrants;
excludes boundary line.

P Quadrants I, II, III;
excludes boundary line.

M Quadrants I, III, IV;
excludes boundary line.

⑨ $3x + y > 0$

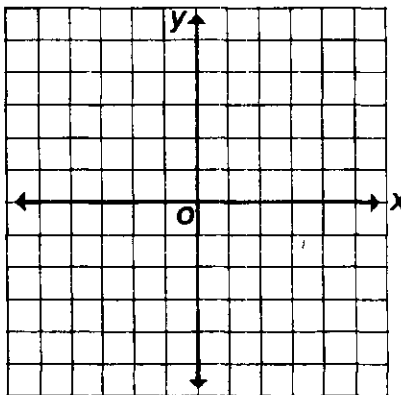


R Quadrants I, II, IV;
excludes boundary line.

L All four quadrants;
includes boundary line.

M Quadrants I, III, IV;
excludes boundary line.

⑩ $2(x - y) \geq 5$

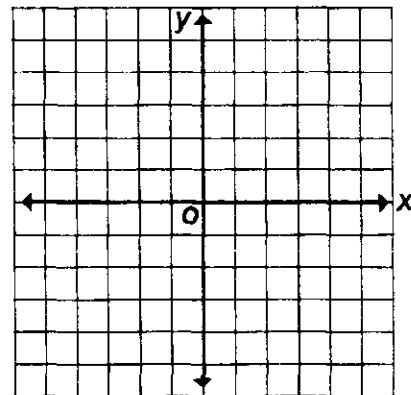


Y All four quadrants;
excludes boundary line.

U Quadrants II, III, IV;
includes boundary line.

A Quadrants I, III, IV;
includes boundary line.

⑪ $5y - 2 \geq 3x - 7$



N Quadrants I, III, IV;
excludes boundary line.

B All four quadrants;
includes boundary line.

D Quadrants I, II, IV;
includes boundary line.

3	5	1	7	9	8	10	3	5	1	9	6	10	2	10	11	4	10	9
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Solving Linear Systems Hangman

(1,0)


(-5, -6)

(-3, 6)

(-2, -3)

(-4, -9)

Directions: Discover the hidden message. Choose a letter and solve the linear system. Check to see if the solution matches the above blanks. Add a body part if it does not match. **YOU MUST SHOW WORK ON NOTEBOOK PAPER!**

A $x = -4y + 14$ $-2x + 3y = 5$	J $5x + y = -6$ $y = x$	S $4x + 3y = 4$ $y = x - 1$
B $x = -3y + 10$ $-3x + y = -10$	K $x + 2y = 6$ $y = 4x - 15$	T $-3x + 4y = -24$ $y = 2x - 1$
C $-6x + y = 11$ $x = -2y - 4$	L $y = 3x - 2$ $-2x + 3y = 8$	U $-2x = y$ $8x + 3y = -6$
D $3x + y = 18$ $y = 3x - 18$	M $x = -2y + 13$ $-4x + 5y = 0$	V $x = -2$ $-2x + y = 4$
E $2x + 5y = -3$ $x = 5y + 6$	N $3x + y = -1$ $x = 4y + 4$	W $4x - 3y = 23$ $y = 2x - 11$
F $4x - 3y = -2$ $y = 2x - 2$	O $4x + 3y = 2$ $x = -3y + 14$	X $5x - 2y = 34$ $y = 5x - 32$
G $x - 2y = -5$ $x = y - 4$	P $x = y + 1$ $-2x + 7y = -32$	Y $3x - 2y = 1$ $x = 2y - 5$
H $3x - 2y = -7$ $y = 4x + 1$	Q $y = -3x + 5$ $-2x + 3y = 15$	Z $x = -2y + 3$ $-3x + y = 12$
I $3x + 2y = 1$ $y = 5x + 20$	R $y = 5x + 7$ $x + 2y = -8$	 Substitution

Solving Linear Systems Hangman

(-2,-1) (-3, 6) (-5, -6) (-3, 5) (6, 0)

Directions: Discover the hidden message. Choose a letter and solve the linear system. Check to see if the solution matches the above blanks. Add a body part if it does not match. **YOU MUST SHOW WORK ON NOTEBOOK PAPER!**

A $x + 4y = 14$ $-2x + 3y = 5$	J $5x + y = -6$ $x - y = 0$	S $4x + 3y = 4$ $5x - 4y = 5$
B $x + 3y = 10$ $-3x + y = -10$	K $x + 2y = 6$ $-4x + y = -15$	T $-3x + 4y = -24$ $-7x + 4y = -8$
C $-6x + y = 11$ $x + 2y = -4$	L $-3x + y = -2$ $-2x + 3y = 8$	U $-2x - y = 0$ $8x + 3y = -6$
D $3x + y = 18$ $-3x + y = -18$	M $x + 2y = 13$ $-4x + 5y = 0$	V $x = -2$ $-2x + y = 4$
E $2x + 5y = -3$ $x - 5y = 6$	N $3x + y = -1$ $x - 4y = 4$	W $4x - 3y = 23$ $-2x + y = -11$
F $4x - 3y = -2$ $2x + 5y = 38$	O $4x + 3y = 2$ $x + 3y = 14$	X $5x - 2y = 34$ $-5x + y = -32$
G $x - 2y = -5$ $x - y = -4$	P $7x - 2y = -23$ $-2x + 7y = -32$	Y $3x - 2y = 1$ $x + 2y = 11$
H $3x - 2y = -7$ $-4x + y = 1$	Q $-3x + y = 5$ $-2x + 3y = 15$	Z $x + 2y = 3$ $-3x + y = 12$
I $3x + 2y = 1$ $-5x + y = 20$	R $-5x + y = 7$ $x + 2y = -8$	→ Elimination