

Name: \_\_\_\_\_ Score: \_\_\_\_\_ out of 70

## Folder Check Algebra Unit # 5

Name on all pages. \_\_\_\_\_

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Pages 3-4 Notes Lesson 1 \_\_\_\_\_

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### Worksheet Policy

- 0 All Questions Done
- 1 More than Half Done
- 2 Only Groupwork Q's
- 3 Less than Half Done
- 4 Blank/Absent

### Notes Policy

- 0 All boxes filled
- 1 One Empty Box
- 2 Two Empty Boxes
- 3 Less than Half Done
- 4 Blank/Absent

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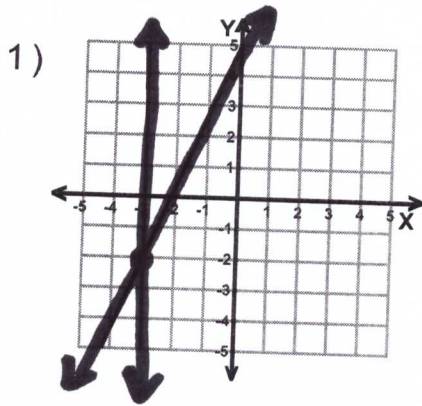


Name : \_\_\_\_\_

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

Unit 5 Lesson 1

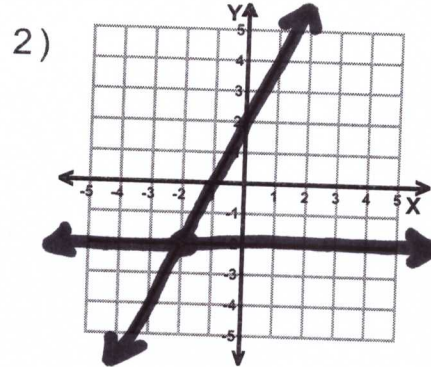
Determine the solutions to the following graphs.



$y = \frac{7}{3}x + 5$

$x = -3$

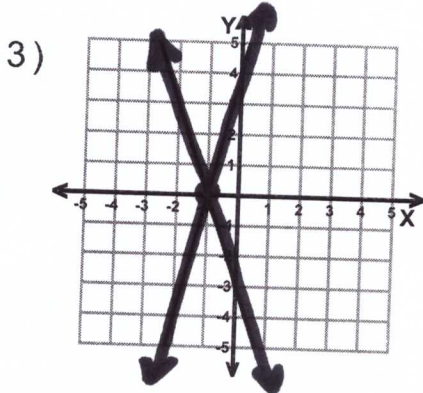
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$y = 2x + 2$

$y = -2$

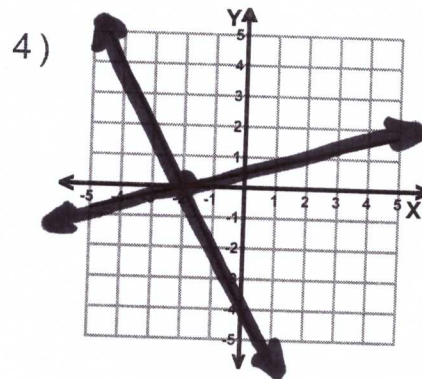
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$y = -3x - 3$

$y = 4x + 4$

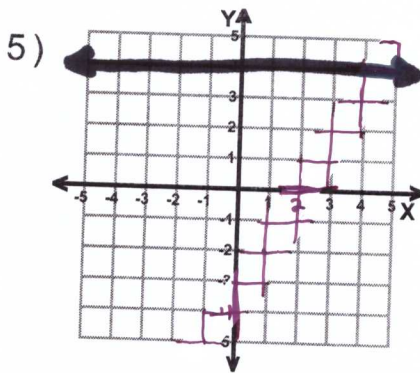
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$y = \frac{1}{4}x + .5$

$y = -2x - 4$

\_\_\_\_\_

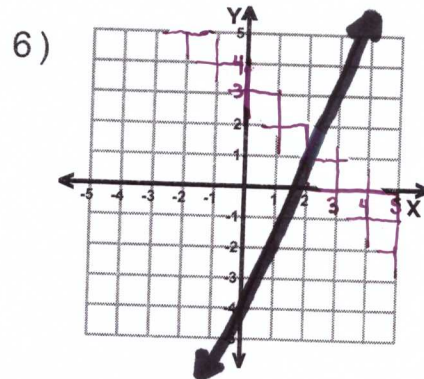


$y = 3x - 5$

$y = 4$

graph this line

\_\_\_\_\_

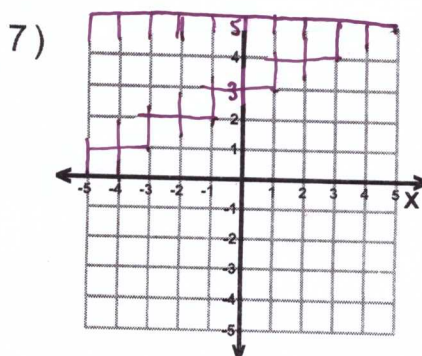


$y = \frac{5}{2}x - 4$

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

graph this line

\_\_\_\_\_

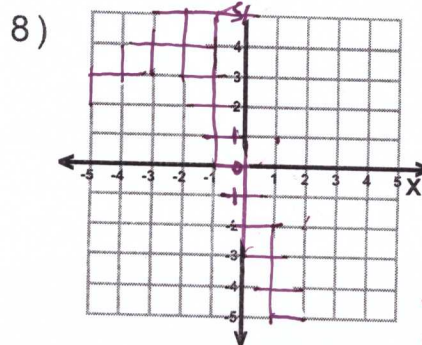


| x | y  |
|---|----|
| 0 | 5  |
| 1 | 3  |
| 2 | 1  |
| 3 | -1 |

| x | y  |
|---|----|
| 0 | -5 |
| 1 | -2 |
| 2 | 1  |

- / -



| x | y |
|---|---|
|   |   |
|   |   |
|   |   |
|   |   |
|   |   |

| x | y |
|---|---|
|   |   |
|   |   |
|   |   |
|   |   |
|   |   |

$y = -3x + 4$

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



#9 Graph the equation *Unit 5*  
*Lesson 1*

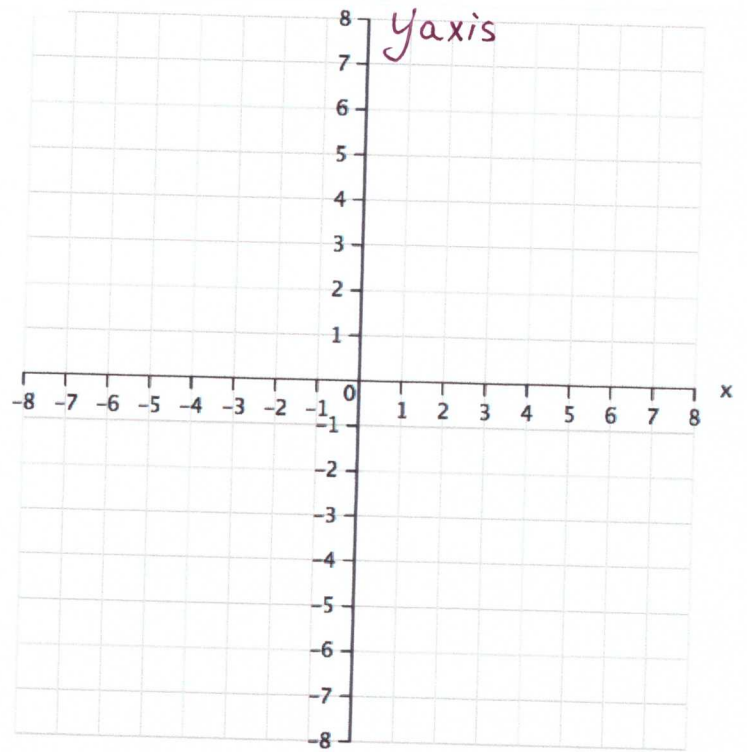
(A)  $Y = 2x - 1$

(B) Is the point (3, 5) on the line?

(C) Write another solution

(D) Write a non-solution

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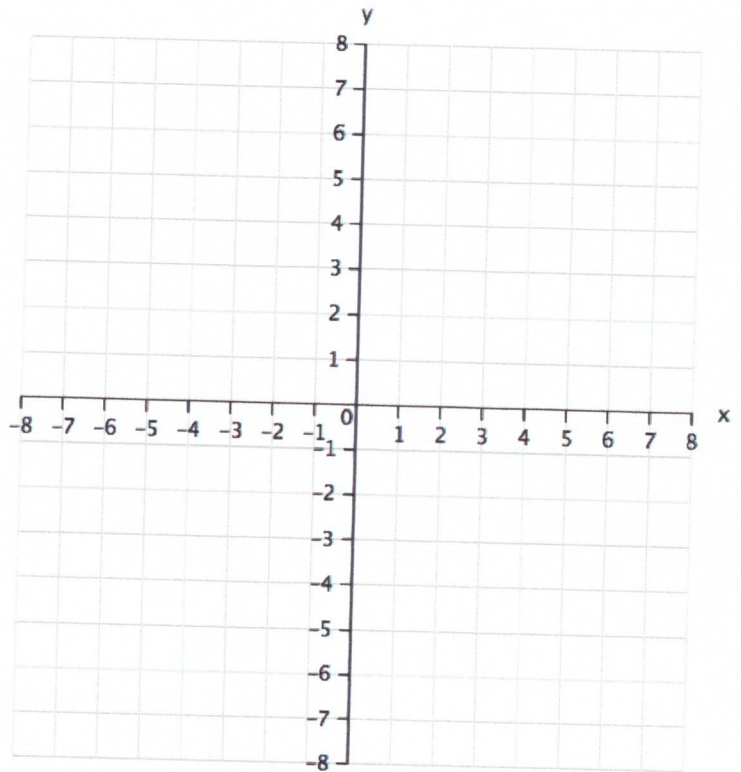
#10 Graph the equation

(A)  $Y = \frac{-2}{3}x + 2$

(B) Is the point (6, -2) on the line?

(C) Write another solution

(D) Write a non-solution



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

Unit # 5 Lesson # 1

**Activator**

**New Vocabulary (1 of 4)**

**New Vocabulary (2 of 4)**

**New Vocabulary (3 of 4)**

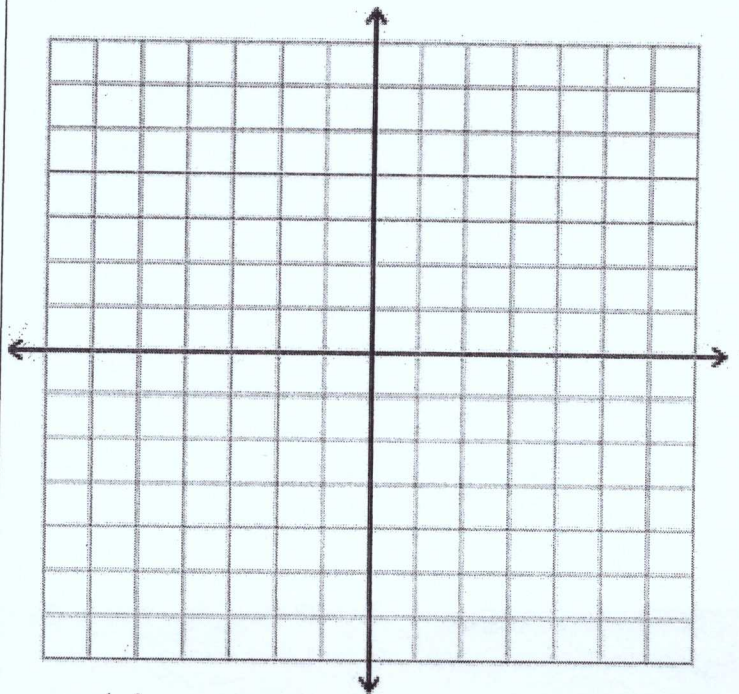
Unit # 5 Lesson # 1

Misconception (4 of 4)

Work Period

Exit Ticket

Extra Graph Paper



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## Solving Systems of Equations by Substitution

Solve each system by substitution. Solve for y.

1)  $y = 7x - 10$

$x = -3$

$y = 7(\quad) - 10$

2)  $x = -8$

$y = -2x - 12$

Unit 5 Lesson 2

$y = -2(\quad) - 12$

Solve for x

3)  $y = -6$

$y = 5x + 4$

$(\quad) = 5x + 4$

Solve for x.

4)  $y = 9x - 9$

$y = 27$

$(\quad) = 9x - 9$

Solve for x and y.

7.  $y = 6x - 14$

$y = -8x$

$-8x = 6x - 14$  New equation  
without y.

#8 Solve for x and y

$y = 2x - 15$

$y = 5x$

$5x = 2x - 15$  New equation  
without y.

$$9) \begin{aligned} y &= 3x \\ 2x + 4y &= 42 \end{aligned}$$

$$2x + 4( ) = 42$$

$$10) \begin{aligned} 6x + 7y &= 20 \\ y &= 2x \end{aligned}$$

$$6x + 7( ) = 20$$

Unit 5  
Lesson 2

$$13) \begin{aligned} y &= X \\ 3x + 3y &= -18 \end{aligned}$$

$$14) \begin{aligned} y &= X \\ -5x - 5y &= 0 \end{aligned}$$



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

Unit # 5 Lesson # 2

**Activator**

**New Vocabulary (1 of 4)**

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**New Vocabulary (3 of 4)**

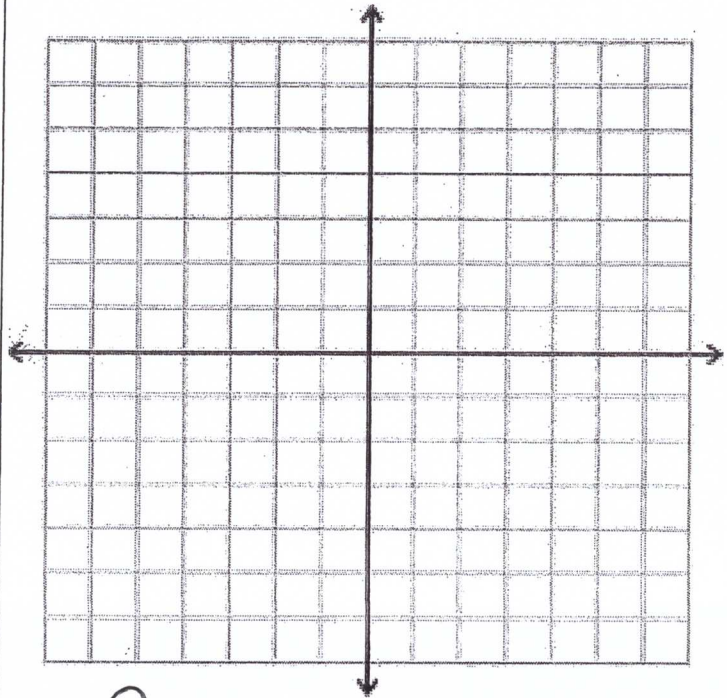
Unit # 5 Lesson # 2

Misconception (4 of 4)

Work Period

Exit Ticket

Extra Graph Paper



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# Elimination Method

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

Unit 5 Lesson 3

Solve the equations for  $x$  and  $y$ .

5)  $-5x + 2y = -13$   
 $5x + 1y = 1$

6)  $2x - 5y = 29$   
 $4x + 5y = 13$

Check: Using substitution

Check:

Elimination Method  
Unit 5 Lesson 3

Solve the equations  
for  $x$  and  $y$ .

7)  $-3x + y = -20$   
 $3x + y = 40$

8)  $5x + 4y = 71$   
 $-x - 4y = -43$

Check: using substitution

Check:

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

Unit #

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Lesson #

3

**Activator**

**New Vocabulary (1 of 4)**

**New Vocabulary (2 of 4)**

**New Vocabulary (3 of 4)**

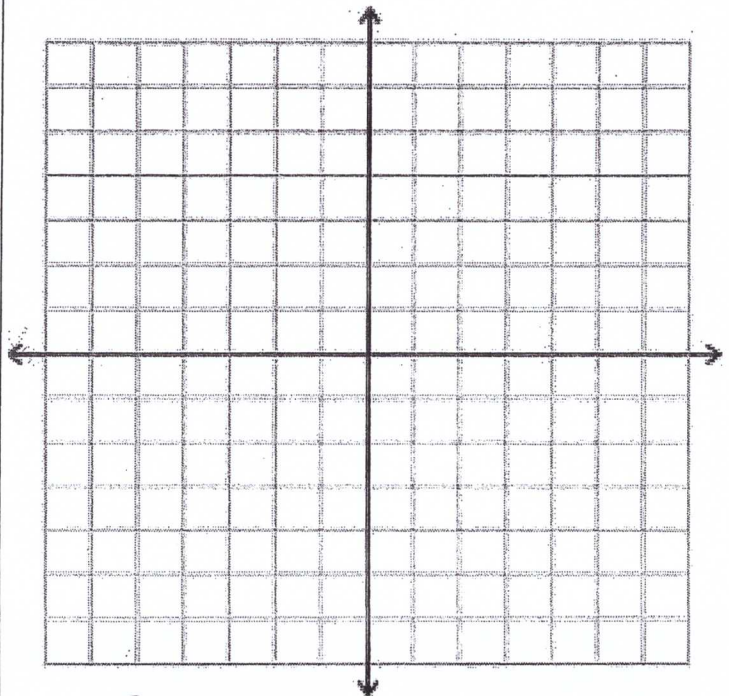
Unit # 5 Lesson # 3

Misconception (4 of 4)

Work Period

Exit Ticket

Extra Graph Paper



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1) Which of the following points lies in the solution set of  $y \leq 2x - 5$ ?

This point

(2, -3)

MAKES the inequality true

$$(\quad) \leq 2(\quad) - 5$$

True or False

2) Which of the following points **DOES NOT** lie in the solution set of  $y \geq -3x + 2$ ?

(-1, 4)

circle

$$(\quad) \geq -3(\quad) + 2$$

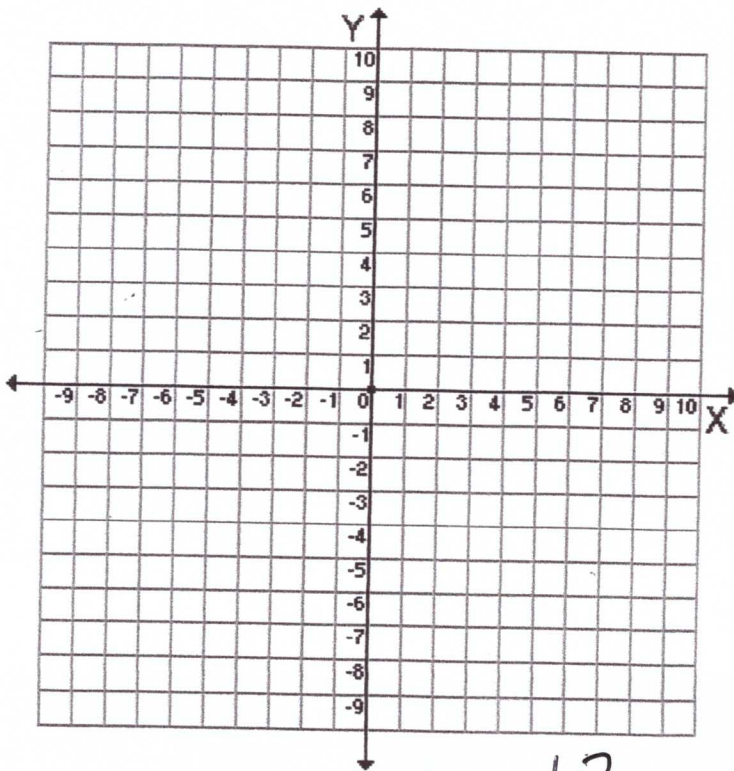
Therefore, it **does OR does Not**

Is this False?

3) Graph the solution set to the inequality shown below. Identify one point that lies in the solution set and one point that does not lie in the solution set

$$y \geq 4x - 2$$

$$y = mx + b$$



-13-

where do you start? (0, )

What is the slope? \_\_\_\_\_

+up / -down

right

M

| x | y |
|---|---|
| 0 |   |
|   |   |
|   |   |
|   |   |
|   |   |

Exercise #3:  
work that leads to your answer.

Is the point a system of inequalities shown below? Show the

$(-2, 8)$

$y > x + 7$

$y \leq -4x + 2$

$\_ > \_ + 7$

$\_ \leq -4(\_) + 2$

Both must be  
to be  
a solution.

$\_ > \_$

$\_ \leq \_$

True or False

True or False

Very often, systems of inequalities will define portions of the  $xy$ -plane that can be visualized and manipulated.

Exercise #4: Consider the system of inequalities given below.

(a) Determine which, if any, of these points is a solution to the system.

$y \geq -2x + 5$

$(-1, 4)$   $(1, -3)$   $(6, 3)$

Yes  
or

Yes  
or

Yes  
or

No

No

No

$y < 2x + 1$

(c)

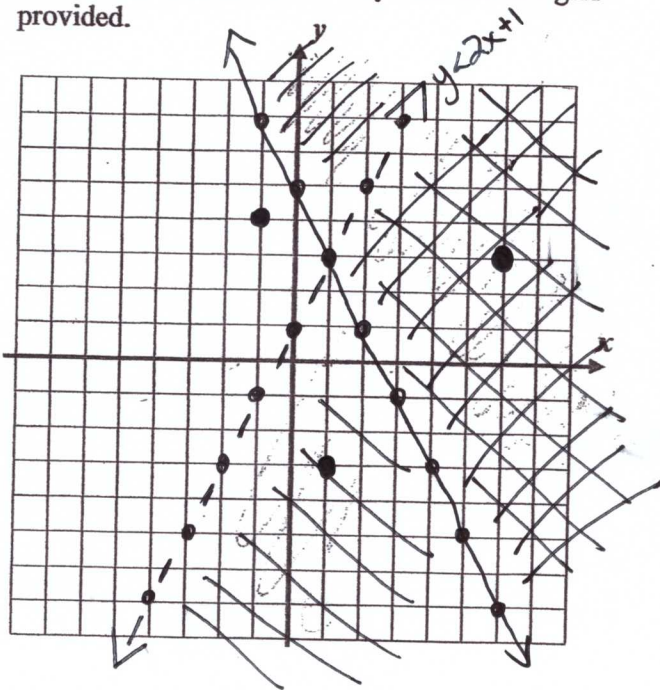
Show  $(6, 3)$  is solution

Must be in the double shaded.

(b) Sketch the solution to the system on the grid provided.

$y \geq -2x + 5$

$y < 2x + 1$





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

Unit #

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4

**Activator**

**New Vocabulary (1 of 4)**

**New Vocabulary (2 of 4)**

**New Vocabulary (3 of 4)**

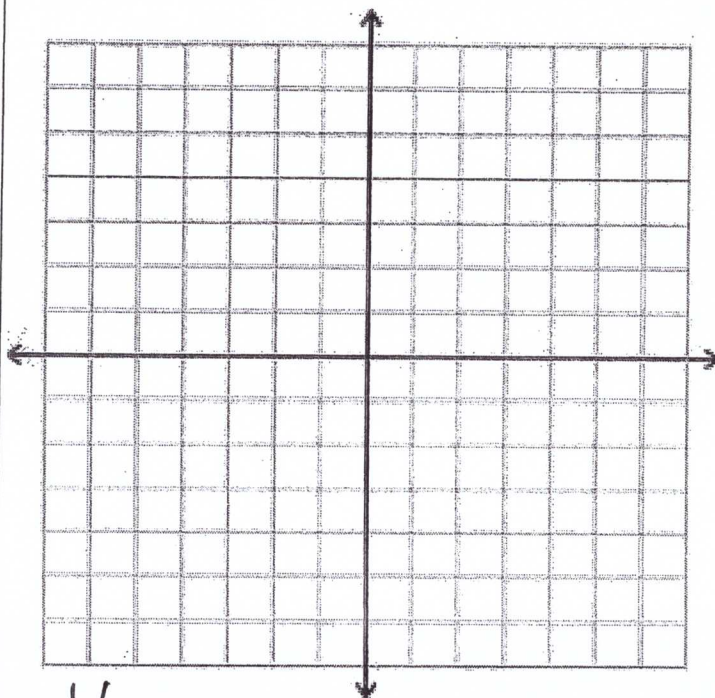
Unit # 5 Lesson # 4

Misconception (4 of 4)

Work Period

Exit Ticket

Extra Graph Paper



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9. Solve the following systems of equations.

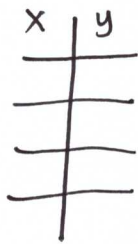
$$y + x = -1$$

subtract  $x$



$$3x + y = -7$$

subtract  $3x$



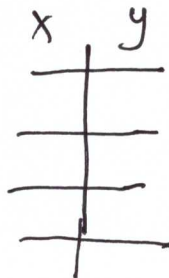
10. What is the solution? (\_\_\_\_, \_\_\_\_)  
 where the lines cross

12. Solve the systems of equations

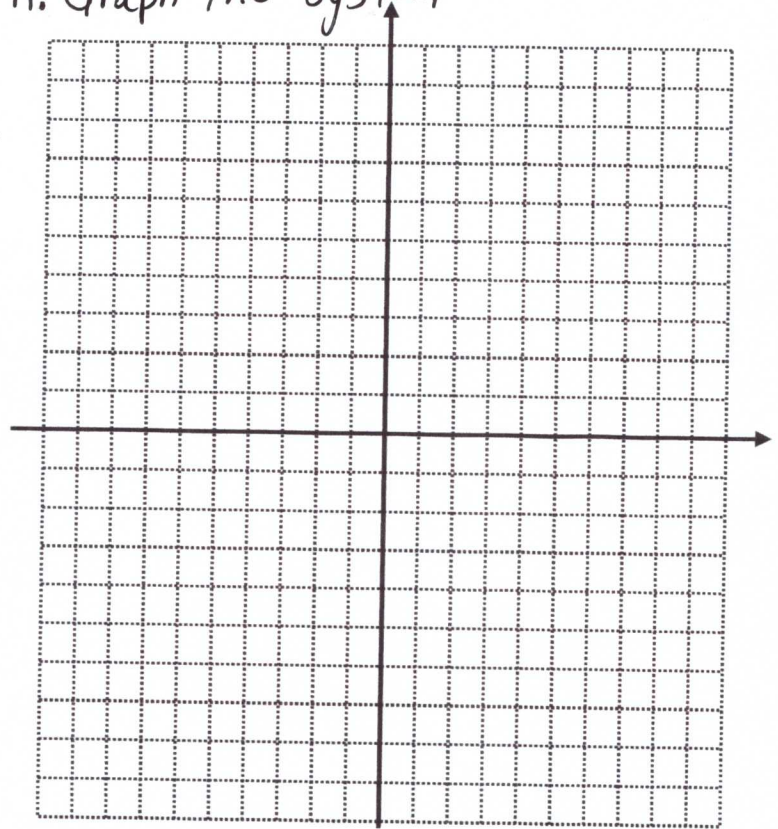
$$y - 2x = 6$$



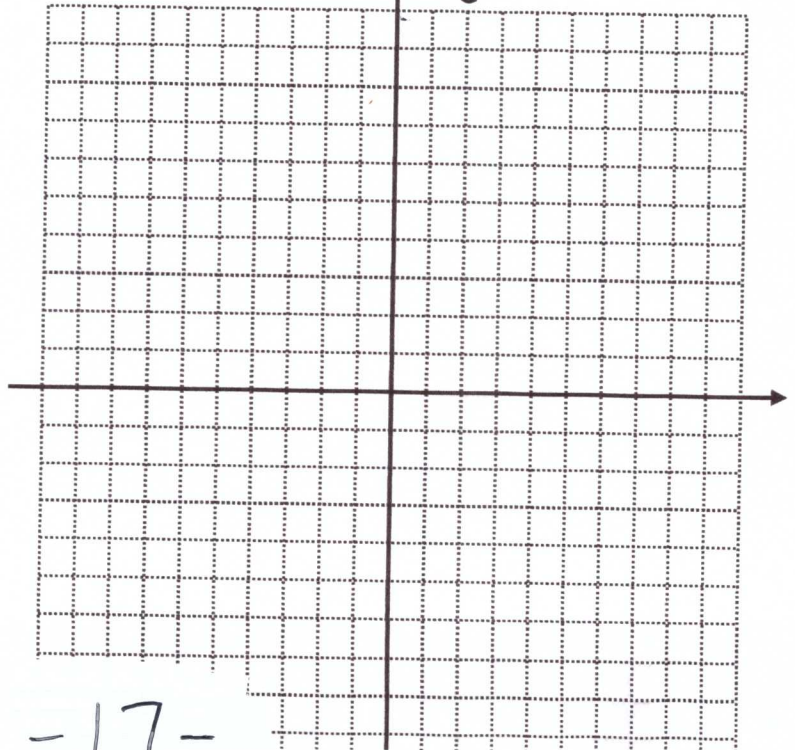
$$-x + y = 3$$



11. Graph the system



14. Graph the System

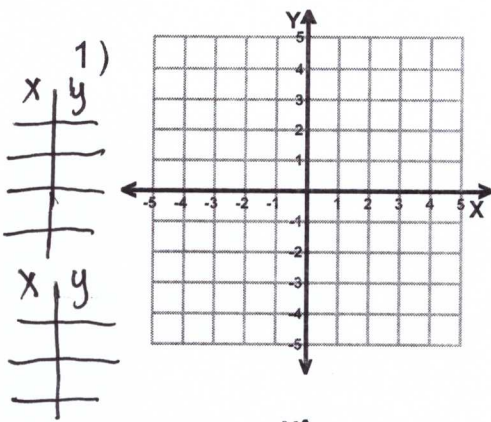


13.

What is the solution? (\_\_\_\_, \_\_\_\_)

The solution is where the lines cross.

Solve each system by graphing.

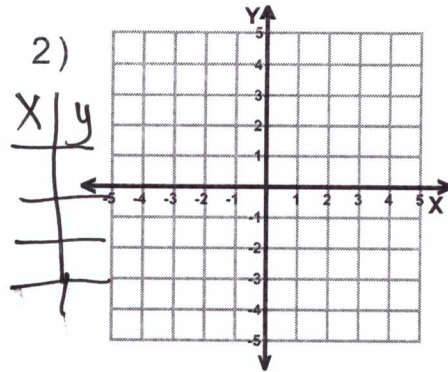


$$y = -\frac{5}{3}x + 3$$

$$y = \frac{1}{3}x - 3$$

\_\_\_\_\_

Solution

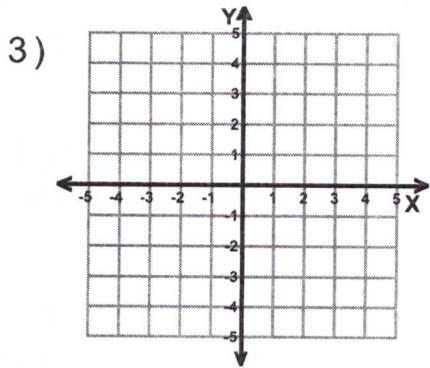


$$y = -\frac{1}{2}x - 1$$

$$y = \frac{1}{4}x - 4$$

\_\_\_\_\_

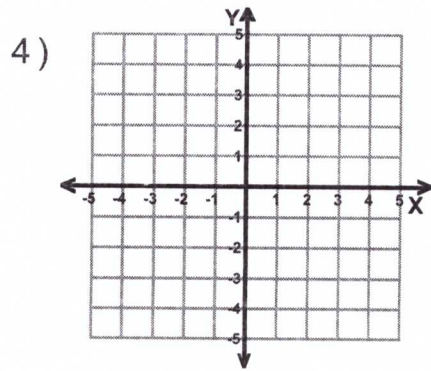
Solution



$$y = -1$$

$$x = 2$$

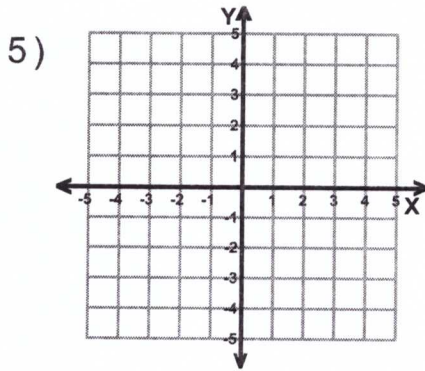
\_\_\_\_\_



$$y = 3$$

$$x = -4$$

\_\_\_\_\_

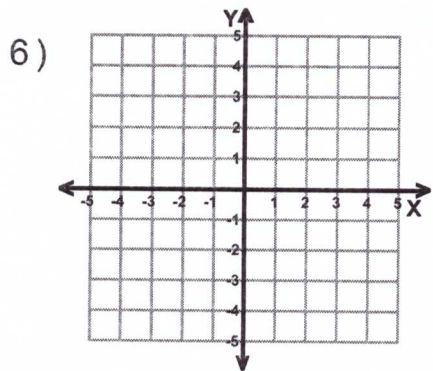


$$y = -2x + 2$$

$$y = -2x - 2$$

No Solution

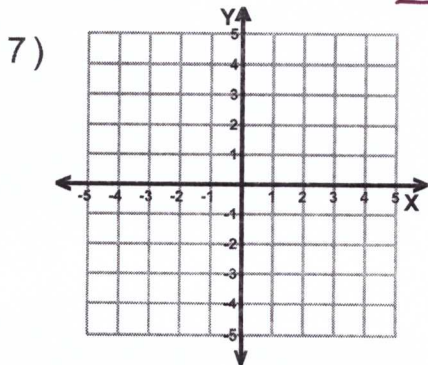
why? \_\_\_\_\_



$$y = 3x - 4$$

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

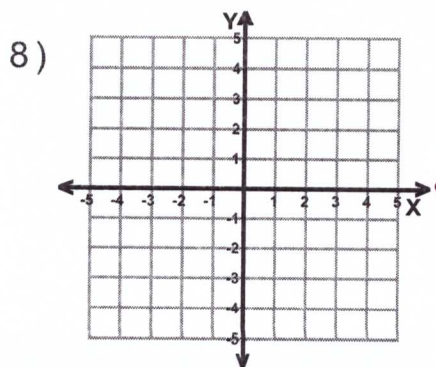
\_\_\_\_\_



$$y = -\frac{1}{2}x - 2$$

$$y = \frac{3}{2}x + 2$$

\_\_\_\_\_



$$y = \frac{1}{3}x - 3$$

$$y = -x + 1$$

\_\_\_\_\_

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

Unit #

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Lesson #

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**Activator**

**New Vocabulary (1 of 4)**

**New Vocabulary (2 of 4)**

**New Vocabulary (3 of 4)**

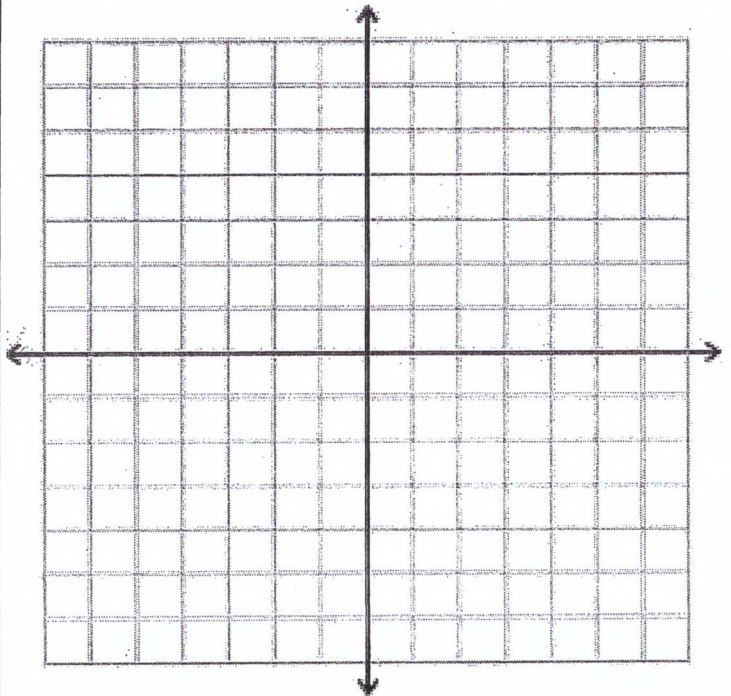
Unit # 5 Lesson # 5

Misconception (4 of 4)

Work Period

Exit Ticket

Extra Graph Paper



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# Systems of Inequalities

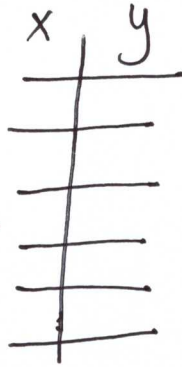
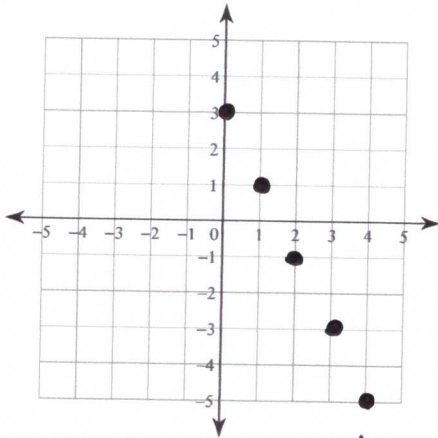
Sketch the solution to each system of inequalities.

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

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

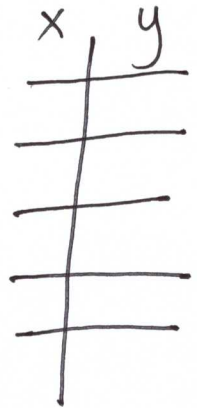
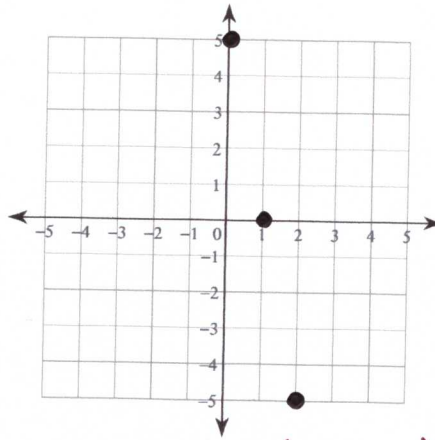
Unit 5 Lesson 6

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



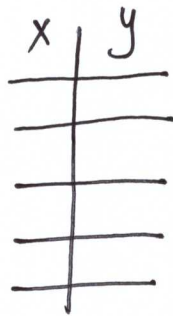
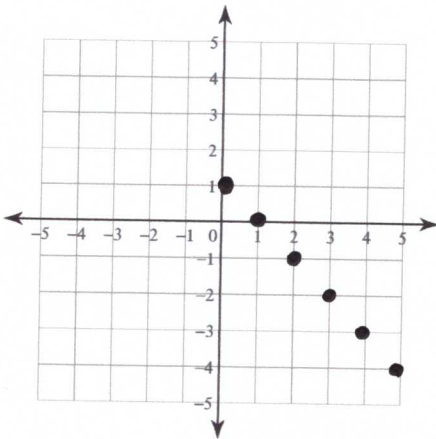
One Solution (—, —)  
One non-Solution (—, —)

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



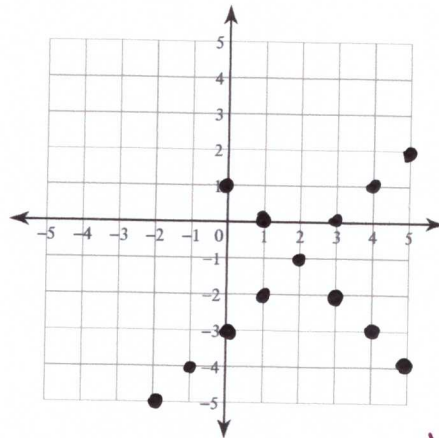
One Solution (—, —)  
One Non-Solution (—, —)

3)  $y \leq -x + 1$

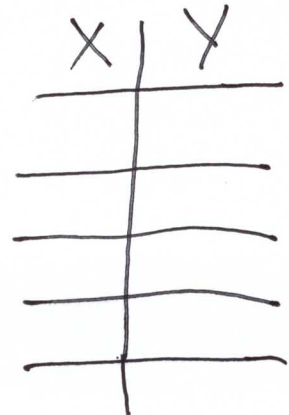
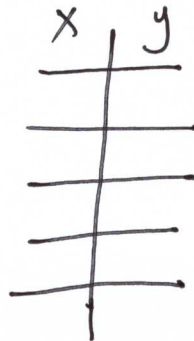


One Solution (—, —)  
One non-Solution (—, —)

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



One Solution (—, —)  
One non-Solution (—, —)

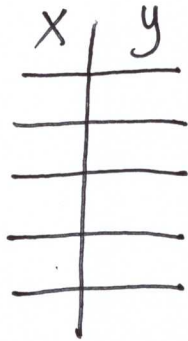


Date: \_\_\_\_\_

#5 Graph the inequality **Unit 5**  
**Lesson 6**

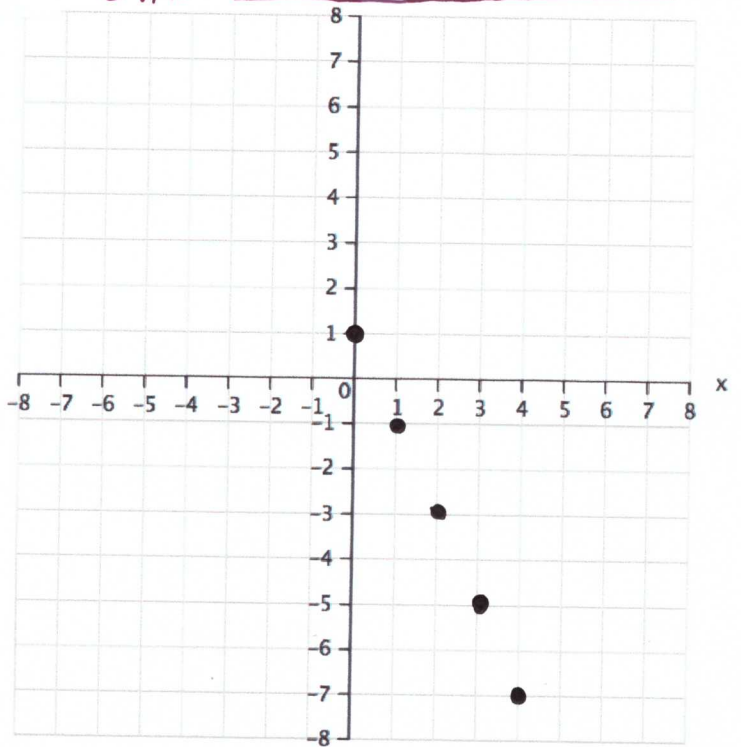
(A)  $Y > -2x + 1$

(B) Is the point (5, 3) in the shaded?



(C) Write another solution

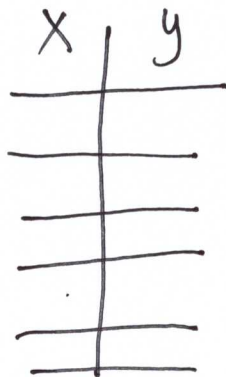
(D) Write a non-solution



#6 Graph the inequality

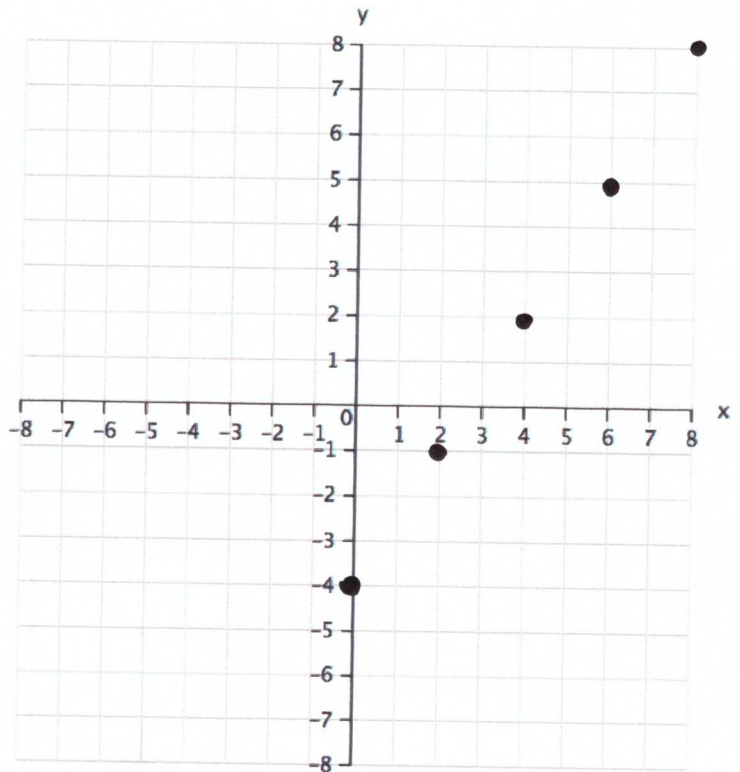
(A)  $Y \leq \frac{3}{2}x - 4$

(B) Is the point (6, -5) in the shaded?



(C) Write another solution

(D) Write a non-solution





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

Unit #

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Lesson #

6

**Activator**

**New Vocabulary (1 of 4)**

**New Vocabulary (2 of 4)**

**New Vocabulary (3 of 4)**

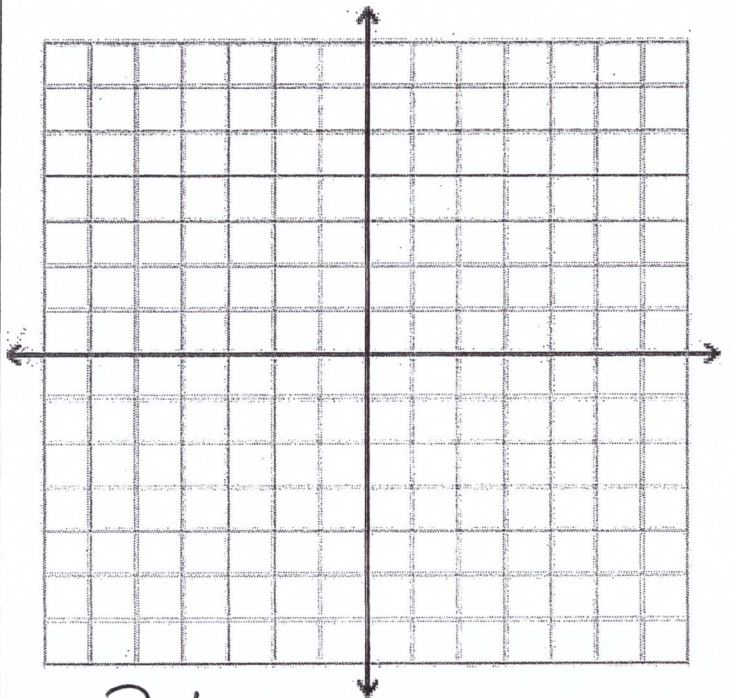
Unit # 5 Lesson # 6

Misconception (4 of 4)

Work Period

Exit Ticket

Extra Graph Paper



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

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

MODELING WITH SYSTEMS OF EQUATIONS  
COMMON CORE ALGEBRA I HOMEWORK

Unit 5  
Lesson 7

APPLICATIONS

$$Y = Mx + B$$

1. A local theater is showing an animated movie. They charge \$5 per ticket for a child and \$12 per ticket for an adult. They sell a total of 342 tickets and make a total of \$2550. We want to try to find out how many of each type of ticket they sold. Let  $c$  represent the number of children's tickets sold and  $a$  represent the number of adult tickets sold.
- (a) Write an equation that represents the fact that 342 total tickets were sold.
- (b) Write an equation representing the fact that they made a total of \$2550.

|  |   |  |   |                  |
|--|---|--|---|------------------|
| _____                                      | + | _____                                      | = | _____            |
| Variable<br>number<br>for child<br>tickets |   | Variable<br>Number<br>for Adult<br>tickets |   | total<br>tickets |

|                             |   |  |   |   |
|-----------------------------|---|--|---|---|
| _____                       | + | _____                                      | = | _____   |
| Cost per<br>child<br>ticket |   | Variable<br>number<br>for child<br>tickets |   | Cost per<br>Adult<br>ticket                   |
|                             |   |  |   | Variable<br>number<br>for<br>Adult<br>tickets |
|                             |   |  |   | total<br>Money                                |

2. A catering company is setting up tables for a big event that will host 764 people. When they set up the tables they need 1 fork for each child and 2 forks for each adult. The company ordered a total of 1146 forks. Set up a system of equations involving the number of adults,  $a$ , and the number of children,  $c$ .

|   |   |  |   |                 |
|---|---|--|---|-----------------|
| _____                                     | + | _____                                    | = | _____           |
| Variable<br>number<br>for child<br>forks. |   | Variable<br>number<br>for Adult<br>forks |   | total<br>people |

|                                 |   |  |   |   |
|---------------------------------|---|--|---|---|
| _____                           | + | _____                                    | = | _____                                       |
| number of<br>forks per<br>child |   | Variable<br>number<br>for child<br>forks |   | number<br>of forks<br>per<br>adult          |
|                                 |   |  |   | Variable<br>number<br>for<br>Adult<br>forks |
|                                 |   |  |   | Total<br>number<br>of<br>forks              |

3. Ilida went to Minewaska State Park one day this summer. All of the people at the park were either hiking or bike. If there were a total of 676 people at the park, how many were hiking? Solve for  $h$ , the number of hikers.

Now, get  $h$  by itself.

|                              |   |                              |   |                             |
|------------------------------|---|------------------------------|---|-----------------------------|
| _____                        | + | _____                        | = | _____                       |
| Variable number<br>of hikers |   | Variable number<br>of bikers |   | total people<br>in the park |

Unit 5 Lesson 7

4. Juanita and Keenan own a camping supply store and just put in an order for flashlights and sleeping bags. The flashlights cost \$12 each and the sleeping bags cost \$45 each. If the total cost for the flashlights and sleeping bags was \$1788, There were 94 items purchased.

$$\begin{array}{ccccccccc}
 \underline{\hspace{1cm}} & \underline{\hspace{1cm}} & + & \underline{\hspace{1cm}} & \underline{\hspace{1cm}} & = & \underline{\hspace{1cm}} & \underline{\hspace{1cm}} & + & \underline{\hspace{1cm}} & = & \underline{\hspace{1cm}} \\
 \text{Cost} & \text{Quantity} & & \text{Cost} & \text{Quantity} & & \text{Total} & & & \text{Quantity} & \text{Quantity} & & \text{total} \\
 \text{each} & \text{Variable} & & \text{each} & \text{Variable} & & \text{Cost} & & & \text{Variable} & \text{Variable} & & \text{Items}
 \end{array}$$

5. For a concert, there were 100 sold tickets for the performance. The tickets sold at the door cost \$10 and the tickets sold in advance cost \$6. The total amount of sales for both types of tickets was \$650. Let  $d$  = the number of door tickets and let  $A$  = the number of advanced ticket sales

$$\underline{\hspace{1cm}} + \underline{\hspace{1cm}} = \underline{\hspace{1cm}} \qquad \underline{\hspace{1cm}} + \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$$

6. Eldora and Finn went to an office supply store together. Eldora bought 15 boxes of paper clips and 7 packages of index cards for a total cost of \$55.40. Finn bought 12 boxes of paper clips and 10 packages of index cards for a total cost of \$61.70. Let  $P$  = Cost of a paper clip box  
Let  $I$  = Cost of the Index card box

$$\underline{\hspace{1cm}} + \underline{\hspace{1cm}} = \underline{\hspace{1cm}} \qquad \underline{\hspace{1cm}} + \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$$

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

Unit #

5

Lesson #

7

**Activator**

**New Vocabulary (1 of 4)**

**New Vocabulary (2 of 4)**

**New Vocabulary (3 of 4)**

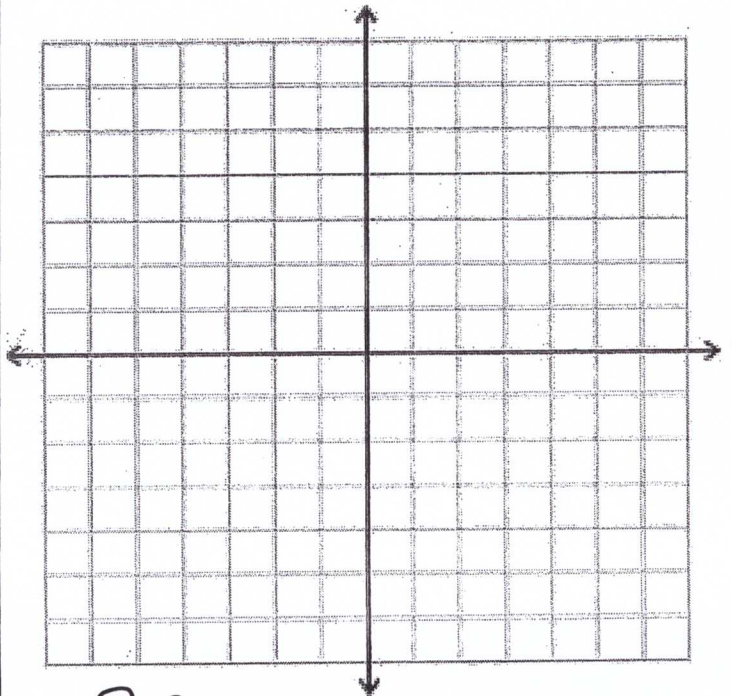
Unit # 5 Lesson # 7

Misconception (4 of 4)

Work Period

Exit Ticket

Extra Graph Paper



-28-

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

# COMMON CORE ALGEBRA I: UNIT #5 Study Guide

# Study Guide

**PART I QUESTIONS: Show all of your work.**

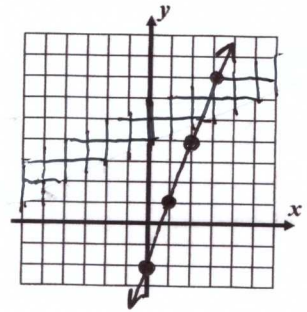
1. Which of the following is the  $x$ -coordinate of the solution to the system shown below?

$x = \underline{\hspace{2cm}}$

$$\begin{aligned} 2x + 3y &= 18 \\ 4x - 3y &= 12 \end{aligned}$$

2. The line  $y = 3x + 2$  is graphed. Graph the other line  $y = -x + 6$ . Which of the following would be the  $y$ -coordinate of the solution when both lines are graphed?

$y = \underline{\hspace{2cm}}$



3. Which of the following equations would have a solution that is the same as the solution to the system?

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

Solution  
( $\underline{\hspace{1cm}}$ ,  $\underline{\hspace{1cm}}$ )  
( $x$ ,  $y$ )

Substitute  $x = 6$

$$4x + 7y = 38$$

Circle:

True or False

4. Is  $(4, 8)$  a solution to the system of equations?

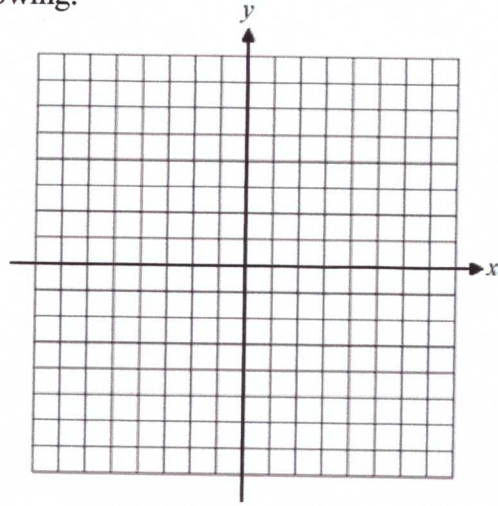
$$y = 5x - 12$$

$$y = -3x + 20$$

5. The quadratic functions  $f(x) = -x^2 + 8$  and  $g(x) = \frac{1}{3}x - 2$  are shown.  
The positive solution to  $f(x) = g(x)$  is which of the following.

Write a solution.

$( \quad , \quad )$   
 ↗ ↖  
 x value y value



6. Which of the following points is a solution to the system of inequalities shown graphed below?

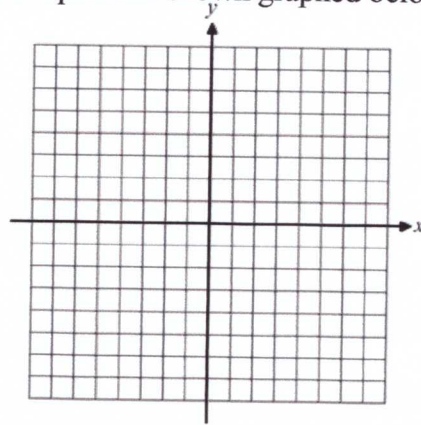
Write a solution

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

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

$( \quad , \quad )$

Is this point in the double shaded?



7. Which of the following is the value of  $y$  that solves the system of equations shown below?

$$5x + 6y = 51 \quad y = 2x$$

8. At what point do the lines  $y = 2x - 5$  and  $y = -2x + 3$  intersect? Show Mr. V the calculator.



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

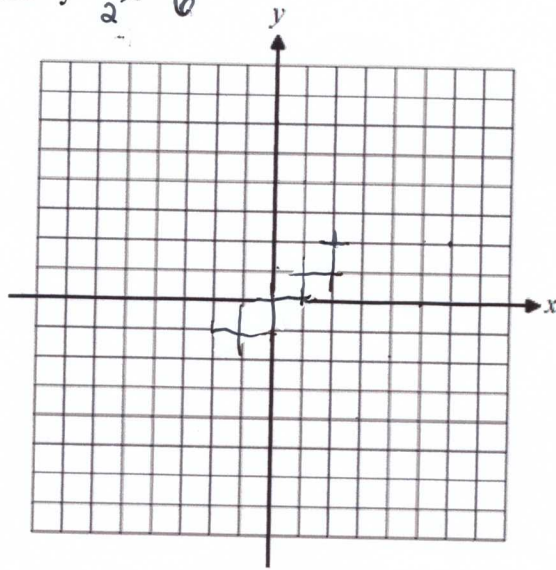
Date: Unit 5 Study Guide

**PART II QUESTIONS: Show all of your work.**

9. Find the value of  $x$  that solves the system shown below. Show the work that leads to your answer.

$$y = 3x \quad \text{and} \quad 2x + y = -30$$

10. Graph the system of equations.  $y = \frac{-2}{3}x + 1$  and  $y = \frac{1}{2}x - 6$



11. What is the solution to #10?

intersection  
of the  
Lines  $(-2, -6)$

**PART III QUESTIONS: Show all of your work.**

12. Solve the following system of equations algebraically. for the solution.

$(-2, -6)$

$$\begin{aligned} 5x + 2y &= 20 \\ -2y - x &= 4 \end{aligned}$$

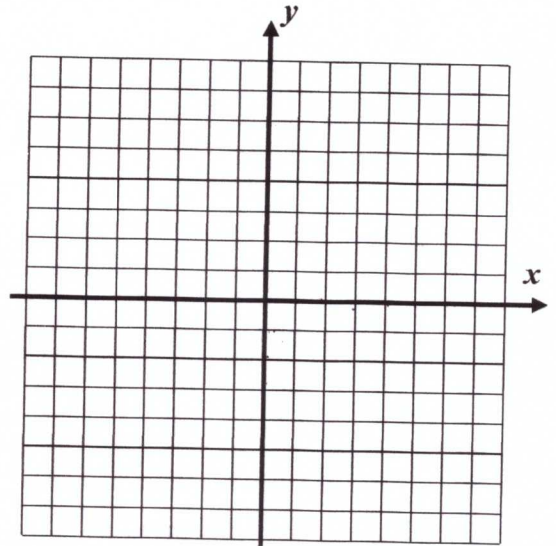
# Unit 5 Study Guide

13. Sketch the graph to the system of inequalities shown below. Explain how to shade.

$y > 4x - 8$       and       $y \leq \frac{-2}{3}x + 6$

|                                  |   |   |
|----------------------------------|---|---|
|                                  | x | y |
| dotted<br>OR<br>Solid            | 0 |   |
| Shade Above<br>OR<br>Shade Below | 2 |   |
|                                  | 4 |   |

|                                  |   |   |
|----------------------------------|---|---|
|                                  | x | y |
| dotted<br>OR<br>Solid            | 0 |   |
| Shade Above<br>OR<br>Shade Below | 3 |   |
|                                  | 6 |   |



14. Graph the point  $(5, 1)$  Is it a solution to the system?

Circle  
Yes  
OR  
No

Is it in the  
double shaded? \_\_\_\_\_

15. The Poughkeepsie Drama Club is selling tickets to an upcoming play. They can sell 500 tickets. The adult tickets sell for \$10 each and student tickets cost free. They would like to raise \$3,000. If  $x$  represents the number of adult tickets and  $y$  represents the number of student tickets, answer the following. Write a system of equations that models this situation.

$$\underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$

number of adult tickets      number of student tickets      number of All tickets

$$\underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$

cost of 1 Adult ticket      number of Adult tickets      cost of 1 student ticket      number of student tickets      Cost of All tickets

16. A party is thrown where 20 tables are used. Each table either sits 8 people or 10 people. A total of 170 people can be sat at the tables. If  $E$  represent the number of 8 person tables and  $T$  represents the number of 10 person tables, write a system of equations that models this situation.

$$\underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$

Number of Eight person Tables      Number of Ten person Tables      Total number of tables

$$\underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$

number of seats per one eight person Table      number of Eight person Tables      number of seats per one Ten person Table      number of Ten person Tables      Total seats in the room