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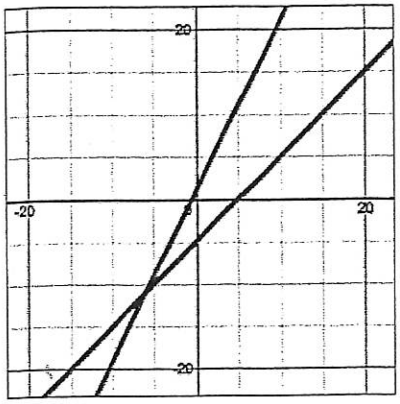
Solutions to Systems of Equations (8.EE.C.8.A)

1. Which of the following points is the intersection of the graphs of the lines given by the equations $y = x - 5$ and $y = 2x + 1$?

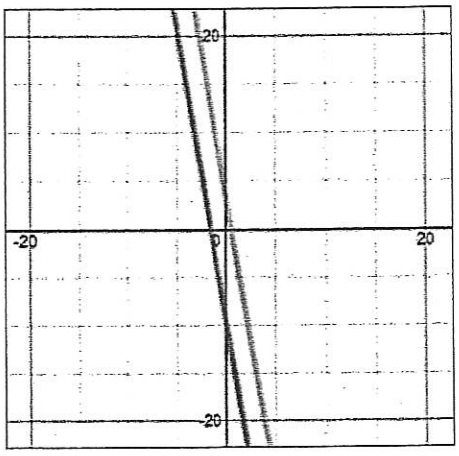


Ⓐ (1, 3)
Ⓑ (-1, -4)
Ⓒ (-2, -3)
Ⓓ (-6, -11)

2. Which of the following best describes the solution set of this system?
$y = 0.5x + 7$
$y = 0.5x - 1$

Ⓐ The solution is (-2, -3) because the graphs of the two equations intersect at that point.
Ⓑ The solution is (0.5, 3) because the graphs of the two equations intersect at that point.
Ⓒ There is no solution because the graphs of the two equations are parallel lines.
Ⓓ There are infinitely many solutions because the graphs of the two equations are the same line.

3. Find the solution to the following system:
$y = 2(2 - 3x)$
$y = -3(2x + 3)$



Ⓐ $x = -1; y = 10$
Ⓑ $x = -2; y = 24$
Ⓒ $x = -3; y = 22$
Ⓓ There is no solution.

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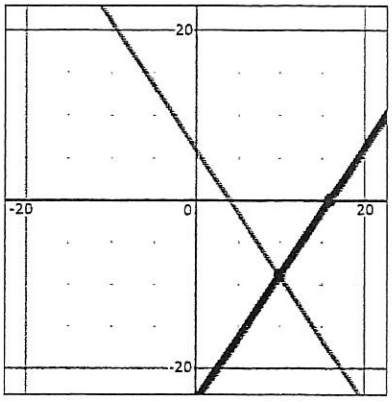
4. Use the graph, to find the solution to the following system:

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

$3x - 2y = 48$



Ⓐ x = 8, y = -6
Ⓑ x = 10, y = -9
Ⓒ x = 12, y = -3
Ⓓ x = 16, y = 0

5. Which of the following best describes the relationship between the graph of the equations in this system?
y = 2x - 6
y = -2x + 6

Ⓐ The lines intersect at the point (0, -3).
Ⓑ The lines intersect at the point (3, 0).
Ⓒ The lines do not intersect because their slopes are opposites and their y-intercep are opposites.
Ⓓ They are the same line because their slopes are opposites and their y-intercepts are opposites.

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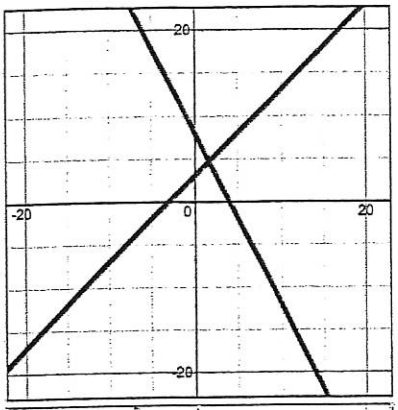
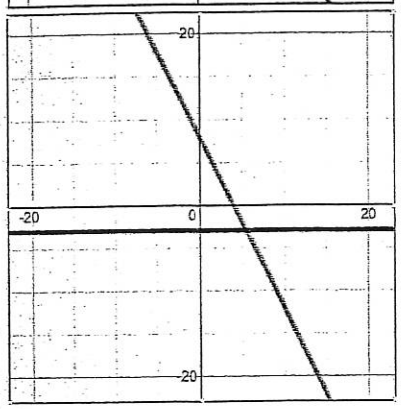
6. Which graph shows the solution to the system $y = -x + 3$ and $y = -2x + 8$?

Ⓐ



Ⓑ



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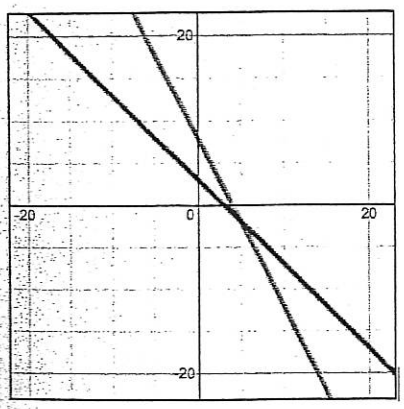

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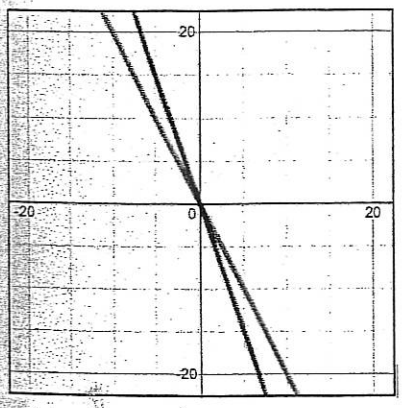

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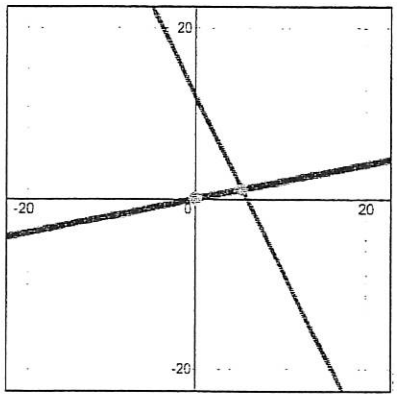
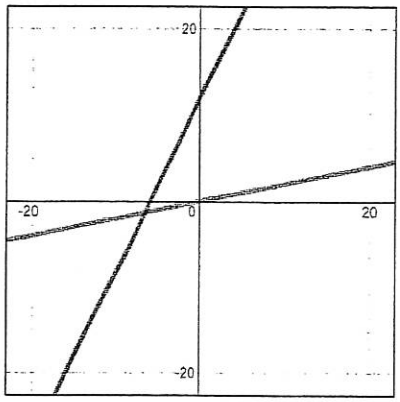
Name: _____ Date: _____

7. Which graph shows the solution to the system $2x+y = 12$ and $y = \frac{1}{5}x$?

Ⓐ



Ⓑ



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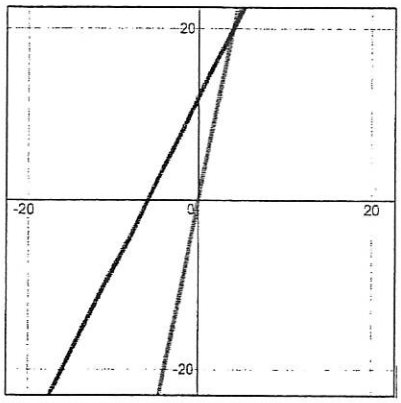

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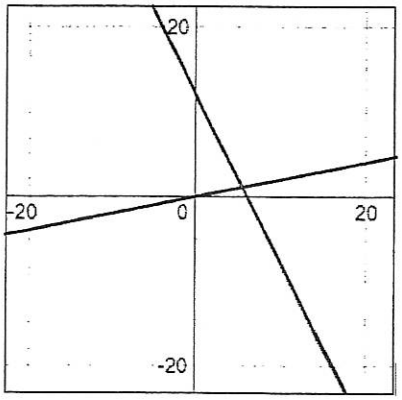

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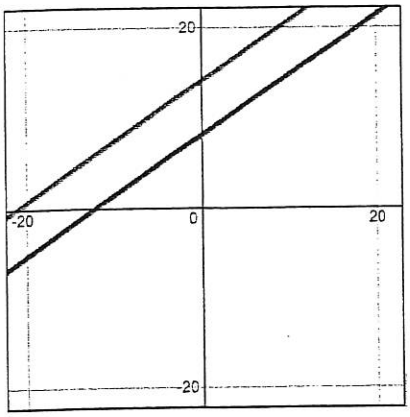
8. Which graph represents a system of equations with infinite solutions?

Ⓐ



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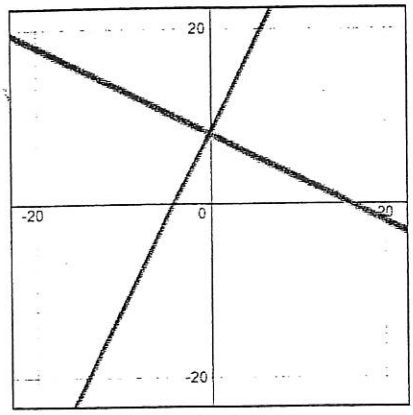

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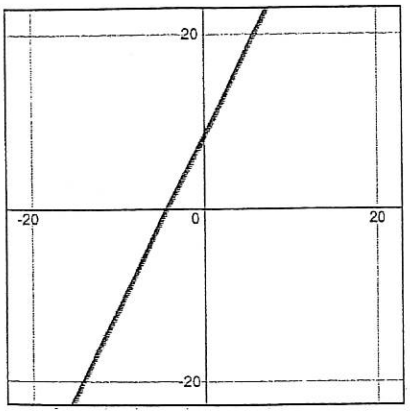

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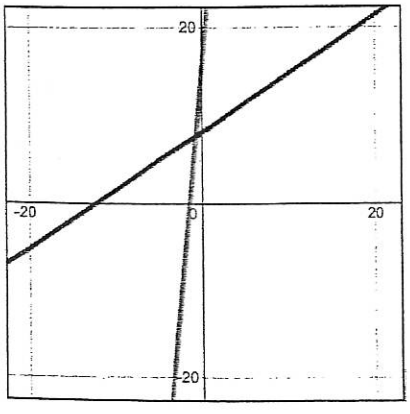

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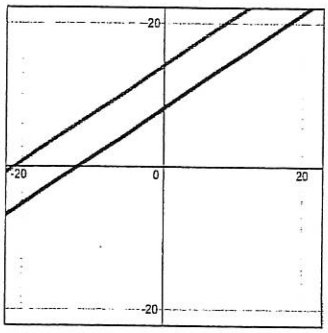
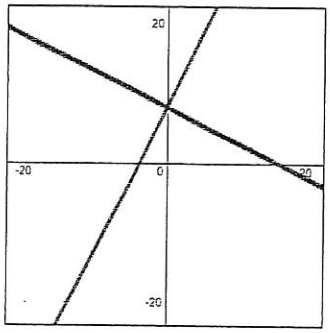
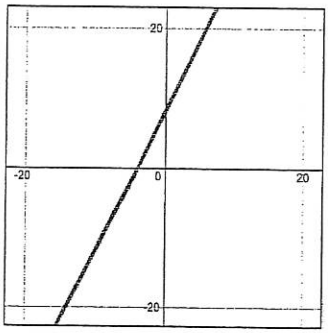
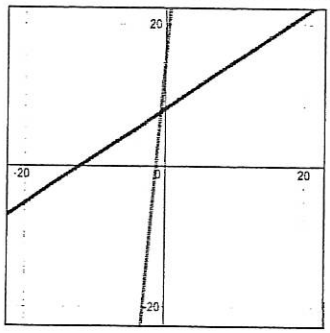
9. Which graph represents a system of equations with no solutions?

Ⓐ 

Ⓑ 

Ⓒ 

Ⓓ 

10. Solve the following system of equations by graphing:

$2x+3y = 4$

$-x+4y = -13$

Ⓐ $x = -4, y = 4$

Ⓑ $x = 2, y = -2$

Ⓒ $x = 5, y = -2$

Ⓓ $x = 11, y = -6$

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Systems of Equations in Real-World Problems (8.EE.C.8.C)

1. Jorge and Jillian have cell phones with different service providers. Jorge pays $50 a month and $1 per text message sent. Jillian pays $72 a month and $0.12 per text message sent. How many texts would each of them have to send in order for their bill to be the same amount at the end of the month?

   Ⓐ 2 texts
   Ⓑ 22 texts
   Ⓒ 25 texts
   Ⓓ 47 texts

2. Mr. Stevens is 63 years older than his grandson, Tom. In 3 years, Mr. Stevens will be four times as old as Tom. How old is Tom?

   Ⓐ 17 years
   Ⓑ 18 years
   Ⓒ 20 years
   Ⓓ 22 years

3. Janet has packed a total of 50 textbooks and workbooks in a box, but she can't remember how many of each are in the box. Each textbook weighs 2 pounds, and each workbook weighs 0.5 pounds, and the total weight of the books in the box is 55 pounds. If t is the number of textbooks and w is the number of workbooks, which of the following systems of equations represents this situation?

   Ⓐ $t + w = 55$
   $2t + 0.5w = 50$

   Ⓑ $2t + w = 50$
   $t + 0.5w = 55$

   Ⓒ $t + w = 50$
   $2t + 0.5w = 55$

   Ⓓ $t + w = 55$
   $2.5(t + w) = 50$

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4. Plumber A charges $50 to come to your house, plus $40 per hour of labor. Plumber B charges $75 to come to your house, plus $35 per hour of labor. If y is the total dollar amount charged for x hours of labor, which of the following systems of equations correctly represents this situation?

Ⓐ $y = 50x + 40$
$y = 75x + 35$

Ⓑ $y = 50x + 40$
$y = 35x + 75$

Ⓒ $y = 40x + 50$
$y = 75x + 35$

Ⓓ $y = 40x + 50$
$y = 35x + 75$

5. 10 tacos and 6 drinks cost $19.50. 7 tacos and 5 drinks cost $14.25. If t is the cost of one taco and d is the cost of one drink, which of the following systems of equations represents this situation?

Ⓐ $10t + 6d = 19.50$
$7t + 5d = 14.25$

Ⓑ $6t + 10d = 19.50$
$5t + 7d = 14.25$

Ⓒ $10t + 7t = 19.50$
$6d + 5d = 14.25$

Ⓓ $16(t + d) = 19.50$
$12(t + d) = 14.25$

6. Cindy has $25 saved and earns $12 per week for walking dogs. Mindy has $55 save and earns $7 per week for watering plants. Cindy and Mindy save all of the mone they earn and do not spend any of their savings. After how many weeks will the have the same amount saved? How much money will they have saved?

Ⓐ After 4 weeks, they each will have $83 saved.
Ⓑ After 5 weeks, they each will have $85 saved.
Ⓒ After 6 weeks, they each will have $97 saved.
Ⓓ After 7 weeks, they each will have $104 saved.

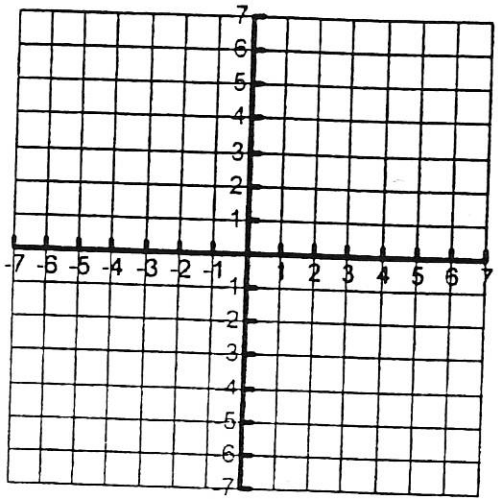
Algebra I - Chapter 7 Review **Name:**_____

Show ALL work to receive credit!

1) Use the GRAPHING method to solve the system of equations

$y = 3x + 4$

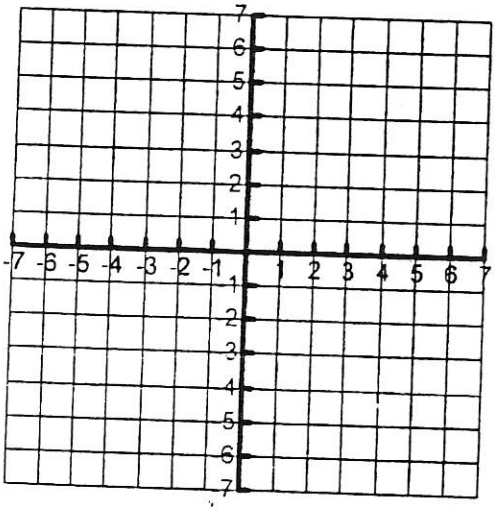
$y = -2x - 1$



2) Graph the system and state the solution.

$y = -3x + 9$

$y = -3x + 9$



3) The sum of two numbers is 72. Their difference is 18. Write a system of equations that describes this situation. Solve by elimination to find the two numbers.

4) Solve the system of equations using **substitution.**

$y = x - 2$

$2x + 2y = 4$

5) Solve the system using **elimination.**

$x - 12y = -14$

$2x + 3y = 26$

Tell whether the system has no solution, one solution, or infinitely many solutions.

a) $x+y=3$

$x-y=3$

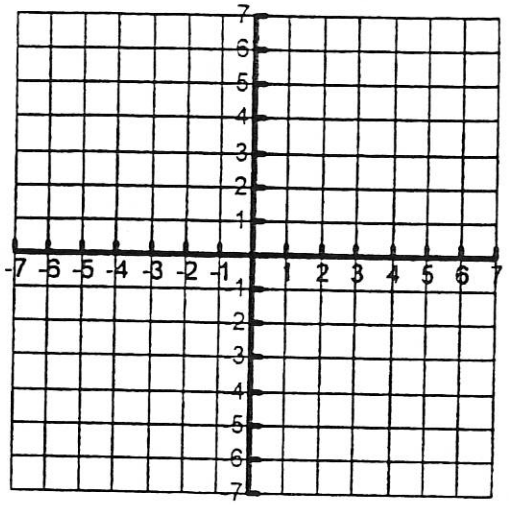
5 5 75 95 65 95 85 25 35 25 95 45 75 65 35 75 15 95 65

b) $x-3y=-2$

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

7) Graph the inequality. (Don't forget to shade!)

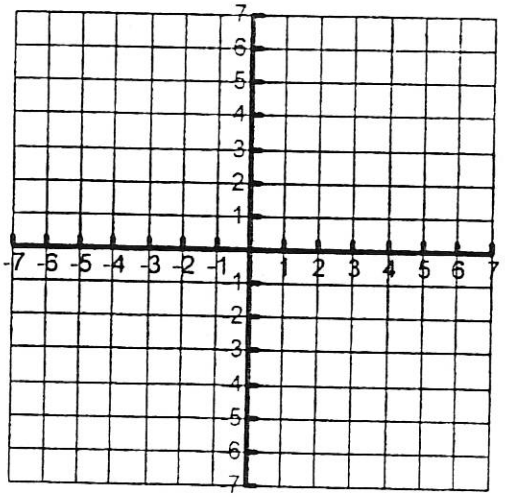
$y > 3x - 1$



8) Graph the system of linear inequalities.

$y \leq x + 4$

$2x + y < 4$



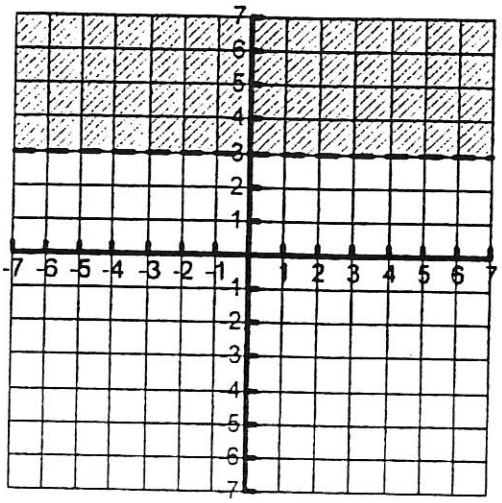
9) Without solving, what method would you choose to solve the system: *graphing*, *substitution*, or *elimination*? Explain your reasoning.

$2x - 3y = 61$

$2x + y = -7$

5 5 75 95 65 95 85 25 35 25 95 45 75 65 35 75 15 95 65

10) Write the linear inequality that would create the following graph:



11) Solve the following system of equations by the method of your choice:

$2x + 4y = 8$
$5x + y = -7$

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55 95 65 65 5 5 85 5 5 15 45 95 55 85 75 95 55 5 85 25 75 95 15 15 5 75 65 5 5 5 55 35