

Name \_\_\_\_\_

Period \_\_\_\_\_

Unit 6 Study Guide

**Systems of Equations by Substitution**

SHOW YOUR WORK!

1.  $y = 3(x - 1) - 5$   
 $\frac{1}{3}y - x = 7$

3.  $5x + 2y = 9$   
 $x + y = -3$

2.  $y = x + 4$   
 $3x + 5y = -4$

4.  $20x - 30y = -50$   
 $x + 2y = 1$

**Systems of Equations by Elimination/Combination**

SHOW YOUR WORK!

5.  $9x - 2y = 32$   
 $8x - y = 30$

7.  $3y = 6x - 15$   
 $-2y = 10 - 4x$

6.  $6x + 5y = 19$   
 $2x + 3y = 5$

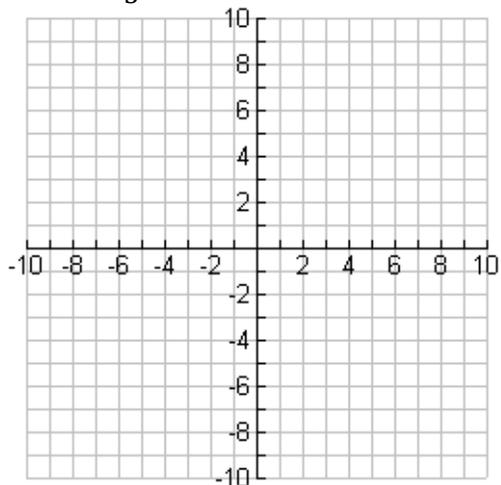
8.  $9x - 15y = 21$   
 $-12x + 20y = 28$

## Systems of Equations by Graphing

SHOW YOUR WORK!

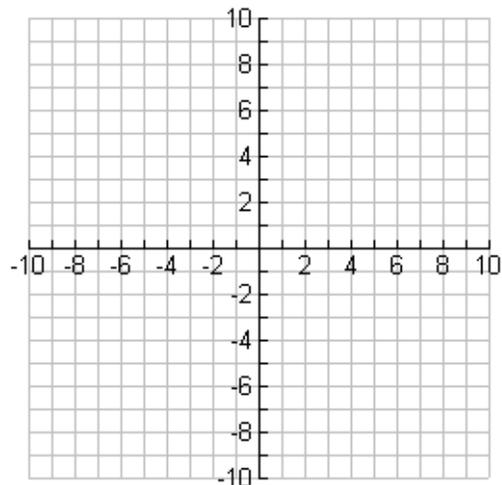
9.  $y = -\frac{1}{3}x$

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



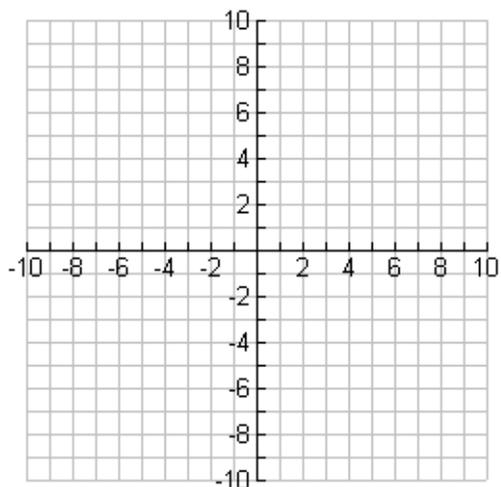
11.  $y = 2$

$$x = 5$$



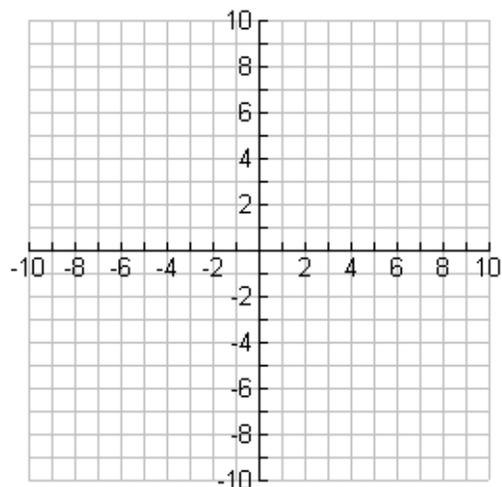
10.  $2x - y = 2$

$$-6y = 12 - 12x$$



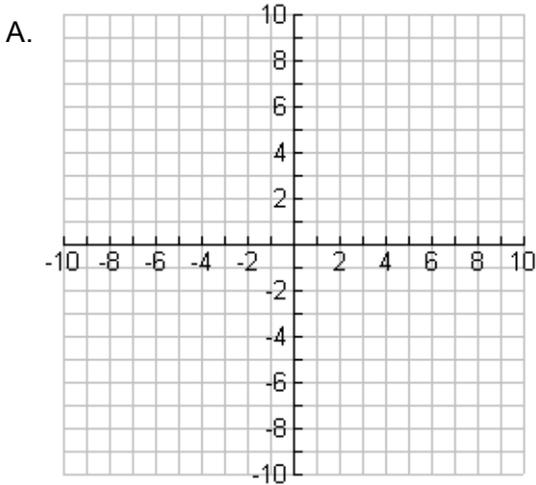
12.  $x = y + 3$

$$2x - y = 5$$



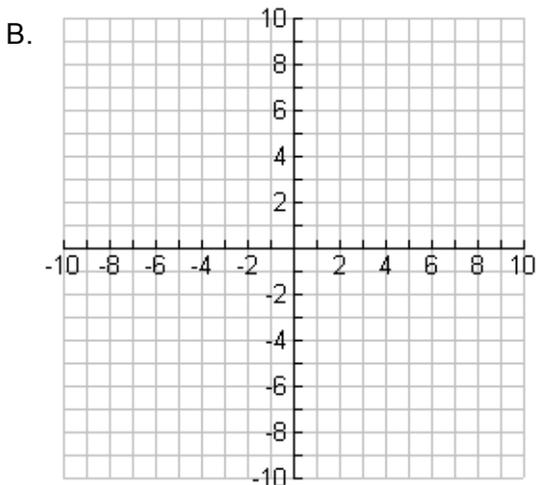
13. Graph the equation  $y = -2x + 3$  on each of the graphs below.

On Graph A, graph a line that creates **one solution**. Write the equation of the new line you graphed and show the solution on your graph.



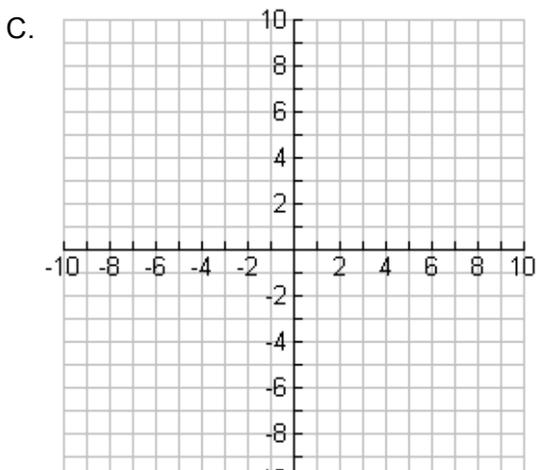
New Equation: \_\_\_\_\_

On Graph B, graph a line that creates **no solution**. Write the equation of the new line you graphed.



New Equation: \_\_\_\_\_

On Graph C, graph a line that creates **infinite solutions**. Write the equation of the new line you graphed.  
Note: The equation must be in standard form and must have different coefficients than the original equation in standard form!



New Equation: \_\_\_\_\_

### **Systems of Equations in Context**

SHOW YOUR WORK! Be sure to define your variables.

14. The perimeter of a rectangle is 48 cm. The length of the rectangle is half of the width. What are the dimensions of the rectangle?
15. Suppose you have \$28.00 in your bank account and start saving \$18.25 every week. Your friend has \$161.00 in his account and is withdrawing \$15 every week. When will your account balance be the same?
16. The admission fee at a small fair is \$1.50 for children and \$4.00 for adults. On a certain day, 2200 people enter the fair and \$5050 is collected. How many children and how many adults attended?
17. The school that Stephen goes to is selling tickets to a choral performance. On the first day of ticket sales, the school sold 3 senior citizen tickets and 1 child ticket for a total of \$38. The school took in \$52 on the second day by selling 3 senior citizen tickets and 2 child tickets. Find the price of one senior citizen ticket and the price of one child ticket.