Name _____ Date _____

Topic 6: Solving a system of linear equations algebraically

Solve the system of equations using substitution

Video Help 1: https://www.khanacademy.org/math/cc-eighth-grade-math/cc-8th-systems-topic/cc-8th-systems-with-substitution/v/solving-systems-by-substitution-1

Video Help 2: https://www.khanacademy.org/math/cc-eighth-grade-math/cc-8th-systems-topic/cc-8th-systems-with-substitution/v/solving-systems-by-substitution-2

Video Help 3: https://learnzillion.com/lessons/731-solve-systems-of-equations-by-substitution

1) $x + y = 13$

$x = y + 5$

2) $4x + 5y = 23$

$y = 4x - 5$

$x = 3y - 11$

3) $3x + y = 17$

$x - 2y = 7$

4) $y = 3x - 1$

Solve the system of equations using elimination

Video Help 1: https://learnzillion.com/lessons/732-solve-simple-systems-of-equations-by-linear-combination-elimination

Video Help 2: https://www.khanacademy.org/math/algebra/systems-of-eq-and-ineq/fast-systems-of-equations/v/solving-systems-of-equations-by-elimination

Video Help 3: https://www.khanacademy.org/math/algebra/systems-of-eq-and-ineq/fast-systems-of-equations/v/solving-systems-of-equations-by-multiplication

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

6) $4x + 5y = 23$
$4x - y = 5$

$$x + 3y = 4$$

7) $2x - y = 1$

$$3x + 4y = 26$$

8) $x - 3y = 0$

Write a system of equations and solve algebraically

Video Help: https://learnzillion.com/lessons/734-solving-word-problems-by-using-systems-of-equations

9) At the concession stand, two hamburgers and three sodas cost $9.50. One hamburger and two sodas cost $5.50. Find the cost of one hamburger and the cost of one soda.

10) The owner of a men's clothing store bought 4 belts and 9 ties for $76.50. On the next day, he bought 3 belts and 12 ties and paid $81.00. How much did he pay for one belt and for one tie?

11) 500 tickets were sold to the school dance and $3250 was collected. Some were purchased in advance for $5.00 each. The rest were purchased at the door for $7.50 each. How many tickets were sold in advance and how many were sold at the door?