Algebra 1 - Mr. Allen-Black & Ms. Gulamali

Name_____

Solving Systems of Equations by Substitution.

Date_____ Period_____

Solve each system by substitution.

1) $y = x + 1$
   $y = -6x + 15$

2) $y = -5x + 16$
   $y = -2x + 7$

3) $y = -3x - 12$
   $6x - y = -15$

4) $3x - 2y = 1$
   $y = 3x + 1$

5) $y = 6x + 4$
   $-12x + 2y = -3$

6) $-4x - 2y = 12$
   $y = 2x + 2$

7) $6x + 6y = -12$
   $4x + y = -8$

8) $x - 6y = -11$
   $-3x + 18y = 33$

9) $3x - 2y = -14$
   $x + 4y = 0$

10) $4x + y = 13$
    $6x - 2y = 16$

Write a system of equations that could be used to solve each problem. You do not have to solve these (yet).

11) Jacob and Abhasra are selling cheesecakes for a school fundraiser. Customers can buy French silk cheesecakes and apple cheesecakes. Jacob sold 2 French silk cheesecakes and 7 apple cheesecakes for a total of $75. Abhasra sold 3 French silk cheesecakes and 14 apple cheesecakes for a total of $144. Find the cost each of one French silk cheesecake and one apple cheesecake.

12) Sarawong's school is selling tickets to a choral performance. On the first day of ticket sales the school sold 1 senior citizen ticket and 13 child tickets for a total of $184. The school took in $237 on the second day by selling 8 senior citizen tickets and 9 child tickets. Find the price of a senior citizen ticket and the price of a child ticket.

13) New York City is a popular field trip destination. This year the senior class at High School A and the senior class at High School B both planned trips there. The senior class at High School A rented and filled 13 vans and 5 buses with 440 students. High School B rented and filled 3 vans and 10 buses with 535 students. Each van and each bus carried the same number of students. Find the number of students in each van and in each bus.

14) Chelsea and Asanji each improved their yards by planting hostas and shrubs. They bought their supplies from the same store. Chelsea spent $68 on 12 hostas and 1 shrub. Asanji spent $116 on 4 hostas and 12 shrubs. What is the cost of one hosta and the cost of one shrub?

15) Kayla's school is selling tickets to a spring musical. On the first day of ticket sales the school sold 12 senior citizen tickets and 12 child tickets for a total of $192. The school took in $72 on the second day by selling 6 senior citizen tickets and 2 child tickets. Find the price of a senior citizen ticket and the price of a child ticket.

Answers to Solving Systems of Equations by Substitution.

1) $(2, 3)$ 3) $(-3, -3)$ 5) No solution   7) $(-2, 0)$

9) $(-4, 1)$

11) $2f + 7a = 75$
$3f + 14a = 144$
French silk cheesecake: $6, apple cheesecake: $9

13) $13v + 5b = 440$ 15) $12s + 12c = 192$
$3v + 10b = 535$ $6s + 2c = 72$
Van: 15, Bus: 49   senior citizen ticket: $10, child ticket: $6