

## Solving Systems of Equations by Substitution.

Date \_\_\_\_\_ Period \_\_\_\_\_

**Solve each system by substitution.**

1)  $y = 3x - 12$   
 $y = -5x + 12$

2)  $y = 3x - 9$   
 $y = 3$

3)  $y = -6x + 8$   
 $y = 4x - 2$

4)  $y = 4x - 1$   
 $-6x - 6y = 6$

5)  $3x - y = -11$   
 $y = 3x + 11$

6)  $y = 4x + 10$   
 $5x + 4y = -2$

7)  $-4x - 2y = 12$   
 $y = 2x + 2$

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

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

- 9) 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.
- 10) 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.
- 11) 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.
- 12) 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?
- 13) 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)  $(3, -3)$

3)  $(1, 2)$

5) Infinite number of solutions

7)  $(-2, -2)$

9)  $2f + 7a = 75$

$3f + 14a = 144$

French silk cheesecake: \$6, apple cheesecake: \$9

11)  $13v + 5b = 440$

13)  $12s + 12c = 192$

$3v + 10b = 535$

$6s + 2c = 72$

Van: 15, Bus: 49

senior citizen ticket: \$10, child ticket: \$6