Name: _____

6.2.D1 – LINEAR COMBINATIONS METHOD

Past due on: _____ Period: _____

Solve each system of equations using the linear combinations method. Write your solution as an ordered pair (x, y). *Refer to the 6.2 example "Solving a System of Equations Using the Linear Combinations Method" in the Chapter 6 Summary.*

1. $3x + 5y = 8$
    $2x - 5y = 22$

2. $x + 2y = 6$
    $2x + 2y = 12$

3. $-3x - 8y = -29$
    $7x + 8y = 25$

4. $3x - 6y = 9$
    $3x - 9y = 30$

Define variables and write an equation to represent each situation. *Refer to the 3.2 example "Writing & Solving a Function in Two Variables" in the Chapter 3 Summary.*

5. A football team scores 63 points. All of the points come from field goals worth 3 points and touchdowns (with successful extra-point attempts) worth 7 points. Write a linear equation in standard form to represent the combination of field goals and touchdowns the team could have scored.

    Let x = _____ *& y =* _____

    Equation: _____

6. You have only nickels and dimes in your piggy bank. When you ran the coins through a change counter, it indicated you have 595 cents. Write an equation to represent the combinations of nickels and dimes you could have.

    Let x = _____ *& y =* _____

    Equation: _____

7. You work two jobs. At the first job, you earn $10 per hour. At the second job, you earn $12 per hour. You earned $440 last week. Write an equation to represent the combinations of hours you could have worked at each job.

    Let x = _____ *& y =* _____

    Equation: _____

The problem situation can be represented by a system of linear equations. Solve the system using substitution. *Refer to the 6.1 example "Predicting the Solution of a System Using Graphing" in the Chapter 6 Summary.*

8. One satellite radio service charges $10 per month plus an activation fee of $20. A second service charges $11 per month plus an activation fee of $15. After how many months was the cost the same? Let x = the number of months.

   a. Write an equation that represents the total cost with the 1ˢᵗ service: $y =$ _____

   b. Write an equation that represents the total cost with the 2ⁿᵈ service: $y =$ _____

   c. Graph the system of equations and estimate the break-even point.

   d. Explain what the break-even point represents with respect to the given problem situation.
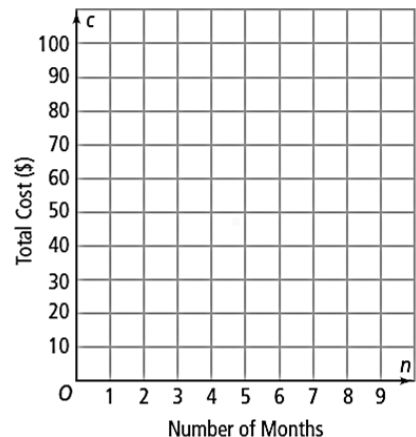
Solve each system of equations by substitution. Write your solution as an ordered pair (x, y). *Refer to the 6.1 example "Solving Systems of Linear Equations Using the Substitution Method" in the Chapter 6 Summary.*

9. $6y = 2x - 14$
$x - 7 = 3y$

10. $2x = 3 - y$
$y = 4x - 12$

Determine the x-intercept and the y-intercept of each equation. Then convert each equation from standard form to slope-intercept form and identify the slope. *Refer to the 3.2 example "Identify the x-Intercept and y-Intercept of an Equation w/Two Variables" and the 3.3 example "Converting Equations between Standard Form and Slope-Intercept Form" in the Chapter 3 Summary.*

11. $5x - 3y = 21$ x-intercept: _____ y-intercept: _____   Slope: _____

   SLOPE–INTERCEPT FORM:

12. $6x - 5y = -23$ x-intercept: _____ y-intercept: _____   Slope: _____

   SLOPE–INTERCEPT FORM: