Define each of the following terms. If you need help, see pages 368, 370, 381, and 388.

1. Break-Even Point –

2. System of Linear Equations –

3. Consistent System –

4. Inconsistent System -

5. Substitution Method –

6. Linear Combinations (Elimination) Method –

7. **Sketch each system of linear equations. How many points of intersection does each system have? How do the slopes and y-intercepts compare for each system of linear equations?**

   a) One Solution:

   b) Infinite Solutions:

   c) No Solution:

Clear the fractions. Then, solve each system of linear equations by any method.

8.
$$\frac{3}{4}x + \frac{1}{2}y = \frac{1}{4}$$
$$\frac{2}{3}x + \frac{1}{6}y = \frac{1}{2}$$

9.
$$3y - x = -2$$
$$y - \frac{1}{3}x = 2$$

10. **Write a system of linear equations to represent the problem situation. Then, graph the system of linear equations and estimate the break-even point. Explain what the break-even point represents with respect to the given problem situation.**
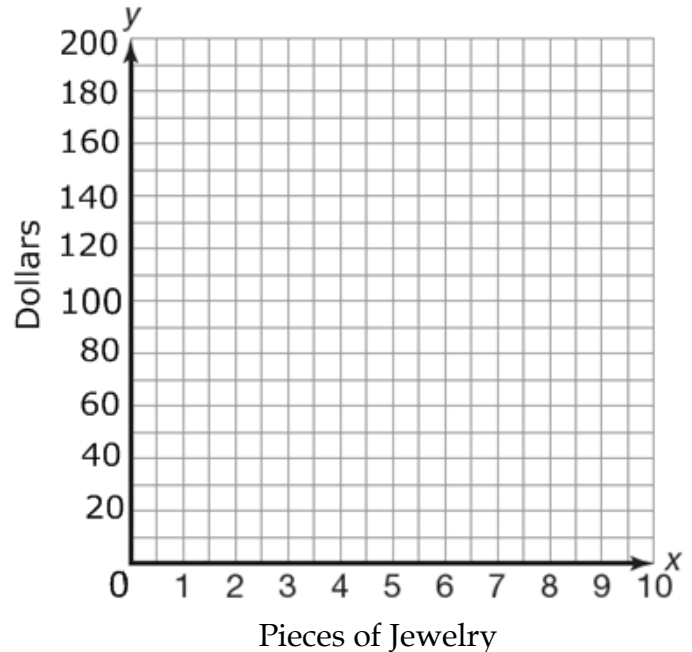
Claire sells jewelry at a local market. *Each* piece of jewelry costs her $5.00 to make and she has to pay $50 for a booth at the market. She sells *each* piece of jewelry for $20.

Income Equation:

Expense Equation:

Break-even Point:

Meaning:

Dollars (y-axis, labeled 0 to 200 by 20s)
Pieces of Jewelry (x-axis, labeled 0 to 10)

11. **A sports ticketing company offers two ticket plans. One plan costs $120 plus $25 *per* ticket. The other plan costs $40 *per* ticket. How many tickets must Gloria buy in order for the first plan to be the same price as the second plan? Write a system of equations and use any method to solve.**

12. **Mikayla and Jeppa are making chicken noodle soup. Nancy opens 4 large cans and 6 small cans of soup and pours them into her soup pot. Her pot contains 114 ounces of soup. Warren opens 3 large cans and 5 small cans of soup. His pot contains 91 ounces of soup. How many ounces of soup does each large can and each small can contain? Write a system of equations and use any method to solve.**