

Berkeley College

GHW #9 Systems of Linear Equations and Applications

NAME _____

DATE _____

Show all work in the space provided. No credit will be given for answers without work shown.

1. Solve the system of equations:

$$\begin{cases} 2x + y = 1 \\ 4x + 2y = 3 \end{cases}$$

2. Solve the system of equations:

$$\begin{cases} 2x + 3y = -2 \\ 4x - 2y = -4 \end{cases}$$

3. Solve the system of equations:

$$\begin{cases} 15x + 12y = 3 \\ 35x + 28y = 7 \end{cases}$$

4. Determine the value of k for which the system of the linear equations $\begin{cases} 2x + 5y = 10 \\ x - ky = -1 \end{cases}$ has no solution.

5. Given the system of linear equations $\begin{cases} 2x + 3y = 1 \\ 14x + 21y = 7 \end{cases}$, which one of the following statements is true?

- The system has no solution.
- The system has one and only one solution $(-1, 1)$.
- The system has infinitely many solutions.
- The system has one and only one solution $(7, 7)$.

6. Determine the value of k for which the system of linear equations $\begin{cases} 2x + 3y = 1 \\ 14x + 21y = k \end{cases}$ has infinitely many solutions.

- a. 7
- b. 3
- c. -1
- d. 1

7. The perimeter of a rectangular floor is 90 feet. Find the dimensions of the floor if the length is twice the width.

- a. Length is 30 feet and width is 15 feet
- b. Length is 40 feet and width is 20 feet
- c. Length is 30 feet and width is 15 feet
- d. Length is 60 feet and width is 30 feet

8. A restaurant manager wants to purchase 200 sets of dishes. One design costs \$25 per set, while another costs \$45 per set. If she only has \$7400 to spend, how many of each design should be ordered?

- a. 110 \$25 sets and 90 \$45 sets
- b. 100 \$25 sets and 100 \$45 sets
- c. 120 \$25 sets and 80 \$45 sets
- d. 80 \$25 sets and 120 \$45 sets