

Intermediate Algebra	Name: _____
Study Guide 8	Class: _____
Due Date: _____	Score: _____

No Work \Leftrightarrow No Points

Use Pencil Only \Leftrightarrow Be Neat & Organized

1. (5 points) Type A pistachio sells for \$6.50 per pound while type B sells for \$8.00 per pound. How much of each type should be used to make a 50-lb mixture that sells for \$7.40 per pound? You must use a system of linear equations in two variables for this problem.

1. _____

2. (5 points) An investment of \$3000 is placed in stocks that pays 4.5% return annually and bonds that pays 8% return annually. How much was invested in each account if the total annual interest from these two accounts was \$177? You must use a system of linear equations in two variables for this problem.

2. _____

3. (4 points) Solve:

$$\begin{cases} 3x - 2y + 5z = 14 \\ 4y - 7z = -7 \\ z = -3 \end{cases}$$

3. _____

4. (5 points) Solve:

$$\begin{cases} 2x + 2y + z = 1 \\ -x + y + 2z = 3 \\ x + 2y + 4z = 0 \end{cases}$$

4. _____

5. (5 points) Solve:

$$\begin{cases} x + y + z = 6 \\ 2x + 3y = 8 \\ x - z = -2 \end{cases}$$

5. _____

6. (6 points) Lisa has \$5.50 in nickels, dimes, and quarters. The number of nickels is 6 more than the number of quarters. The number of dimes is one-third the number of nickels. Find the number of each coin that she has. You must use a system of linear equations in three variables for this problem.

6. _____

7. (7 points) Rabbits in a lab are to be kept on a strict daily diet that includes 30 grams of protein, 16 grams of fat, and 24 grams of carbohydrates. The scientists has only three food mixes available with grams of nutrients per unit given in the table below. Find how many units of each are needed daily to meet each rabbit's dietary need.

	Protein	Fat	Carb.
Mix A	4	6	3
Mix B	6	1	2
Mix C	4	1	12

7. _____

8. (7 points) Find an equation of the form $y = ax^2 + bx + c$, whose graph passes through the points $(2, 3)$, $(-2, 7)$, and $(1, -2)$. You must use a system of linear equations in three variables for this problem.

8. _____

9. (6 points) Solve the following system of nonlinear equations by the elimination method: Warning: There are four possible answers.

$$\begin{cases} 3x^2 + 2y^2 = 35 \\ 4x^2 - 3y^2 = 24 \end{cases}$$

9. _____