

Intermediate Algebra

Name: _____

Study Guide 9

Class: _____

Due Date: _____

Score: _____

No Work \Leftrightarrow No Points

Use Pencil Only \Leftrightarrow Be Neat & Organized

1. (5 points) Solve by matrix method:

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

1. _____

2. (5 points) Solve by matrix method:

$$\begin{cases} x - y + 4z = 10 \\ 2x + 3y = -6 \\ 3x + 2y + 4z = 2 \end{cases}$$

2. _____

3. (5 points) A group of 20 adults and kids paid a total of \$192 to go to the zoo. Adult's ticket was sold at \$12 and kids ticket was sold at \$8. Find the number adults and the number of kids in this group by using matrix method.

3. _____

4. (5 points) The sum of two numbers is 75. The difference of three times one of them and twice the other one is 0. Find both numbers by using matrix method.

4. _____

5. (5 points) Two angles are supplementary. The sum of five times of one of them and twice the other one is 675° . Use system of linear equations in two variables and matrix method to find the measure of both angles.

5. _____

6. (5 points) A local store sells two types of candy, one at \$1.50 and the other \$1.00 per pound. We need 50 pounds at \$1.32 per pound. Use system of linear equations in two variables and matrix method to find how many pounds of each we need to buy.

6. _____

7. (2 points) Evaluate:

$$\begin{vmatrix} 2 & -3 \\ -2 & 3 \end{vmatrix}$$

7. _____

8. (3 points) Evaluate:

$$\begin{vmatrix} 2 & -3 & 4 \\ -2 & 3 & -1 \\ 5 & 1 & 0 \end{vmatrix}$$

8. _____

9. (3 points) Evaluate:

$$\begin{vmatrix} 1 & -4 & 5 \\ 3 & -2 & 1 \\ -3 & -6 & 1 \end{vmatrix}$$

9. _____

10. (7 points) Recommendation by doctors is not to take more than 2400 mg of sodium per day. Lisa had a total of 1030 mg of sodium, David had a total of 2420 mg of sodium, and Mark had a total of 1910 mg of sodium. Use the table below and system of linear equations in three variables to determine the amount of sodium per set serving for each item. You must use the matrix method to solve the system.

	Slice of pizza	Single dip ice cream	One can of soda
Lisa	1	1	1
Mark	2	1	2
David	3	0	2

10. _____

11. (5 points) Solve the following system of nonlinear equations by the substitution method: Warning: There are two possible answers.

$$\begin{cases} x^2 + y^2 = 25 \\ y = x + 1 \end{cases}$$

11. _____