

YOUR NAME: \_\_\_\_\_

George Voutsadakis

Read each problem **very carefully** before starting to solve it. Each problem is worth 5 points. It is necessary to show **all** your work. Correct answers without explanations are worth 0 points. GOOD LUCK!!

1. Use elimination (addition) to solve the system of equations

$$\left\{ \begin{array}{l} x - y - z = 0 \\ x + y + 3z = 8 \\ x + 3y + z = 10 \end{array} \right\}$$

2. At George's Pub and Grill<sup>®</sup> all appetizers are priced equally and all entrees are priced equally (at a different price than the appetizers). Your parents, brother and little sister went with you to George's and the family ordered five appetizers and five entrees. The outing cost your dad \$100. After your family left, your boy/girlfriend, sensing your loneliness, took you again out to George's and the two of you had three appetizers and two entrees at a total cost of \$45. Our goal is to find the prices on the menu at George's.

(a) Introduce variables and state their **precise** meaning.

(b) Write two equations expressing the data in the statement of the problem.

(c) Use the **matrix method** to solve the system of equations of Part (b) to find out what the prices are at George's.