## HOMEWORK 7 - MATH 111 DUE DATE: Monday, March 28 INSTRUCTOR: George Voutsadakis

Read each problem very carefully before starting to solve it. Each question is worth 1 point. It is necessary to show your work. Correct answers without explanations are worth 0 points. GOOD LUCK!!

1. Solve the following system with both the substitution and the elimination methods:

- 2. Suppose a party store sells cashews for \$4.00 and peanuts for \$1.50 per pound. If you want to buy exactly 10 pounds of nuts for \$30.00, how many pounds of each kind should you buy?
- 3. Use the Gauss-Jordan method to solve the following system of equations:

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5. Pretzels cost \$3.00 per pound, dried fruit \$4.00 per pound and nuts \$8.00 per pound. How many pounds of each should be used to produce 140 pounds of trail mix costing \$6.00 per pound in which there are twice as many pretzels by weight as dried fruit? (First set up the equations and then solve the resulting system by the Gauss-Jordan method.)

6. Solve the matrix equation 
$$3X + 2B = A$$
, where  $A = \begin{bmatrix} 1 & -2 \\ 4 & 3 \end{bmatrix}$  and  $B = \begin{bmatrix} 2 & -1 \\ 0 & 5 \end{bmatrix}$ .

7. Find the product 
$$CD$$
, if  $C = \begin{bmatrix} 2 & -1 \\ 4 & 3 \\ 1 & -2 \end{bmatrix}$  and  $D = \begin{bmatrix} 1 & 3 \\ 2 & -4 \end{bmatrix}$ .

8. Compute the inverse  $A^{-1}$  of the matrix  $A = \begin{bmatrix} 5 & 0 & 2 \\ 2 & 2 & 1 \\ -3 & 1 & -1 \end{bmatrix}$ .