Wilf Csaplar Jr. Business 205 Homework #9 **Due Thursday 4/17**

Place your name on the back of this sheet of paper and nowhere else. Staple your answers face up on the front of this sheet of paper. Failure to follow these directions will cost you 1 point. If you use double-sided printing or print on the back of scrap paper, I will give you one additional point.

Show all work for all questions.

1) (20 points) Find A^{-1} if $A = \begin{bmatrix} 1 & 2 & 3 & 4 \\ 0 & 2 & 1 & 3 \\ 0 & 1 & 4 & 1 \\ 0 & 0 & 0 & 2 \end{bmatrix}$.

2) (30 points) For the following system of equations, set it into A**x**=**b** format, where A is a 3x3 matrix. Find A^{-1} using the adjoint and cofactor expansion method. Use that to find the equilibrium values of the variables. C = 60 + .9(Y-T), Y = C + 1000, & T = .2Y

3) (10 points) Use the adjoint and cofactor expansion method to prove that the inverse of a 2x2 matrix is what we said in Section 9.1.

4) (20 points) Set up the following equations in the A**x**=**b** format. Use Cramer's Rule to solve for X, Y, and Z. 2X + 3Z = 80, X + Y = 15, & 3X -Y -Z = 5.

5) (20 points) Set up the following equations in the A**x**=**b** format. Use both Cramer's Rule and the **x**= A^{-1}**b** method to solve for X & Y. 2X + 3Y = -4. 3X - 2Y = 20.