

20 pts

This is the take home portion of Exam 1. You cannot use Tutors or Higher Ed Tutors for help. You may work on this with other students from the class, but you need to individually hand in your own tests. Include all steps to solving each problem. Hand in at the beginning of class on Thursday, Feb 4, 2010.

1. Solve the following system of equations using matrices. Use Gaussian elimination with back-substitution or Gauss-Jordan elimination. Show every step to receive full credit. (5 pts)

$$2x + y = 2z + 4$$

$$2x = 1 + y - 4z$$

$$x + y + 6z = 7$$

2. a) Use your graphing calculator to find the determinant. (4 pts)

$$\begin{vmatrix} 3 & -2 & -1 & 4 \\ -5 & 1 & 2 & 7 \\ 2 & 4 & 5 & 0 \\ -1 & 3 & -6 & 5 \end{vmatrix}$$

- b) Use your calculator to write the matrix in a) above in **row-echelon** form. Transform the components in the matrix you find to fractions. Write your answers for x , y and z .

3. Do problem #62 from Sec 10.2. Show all work and any sketches you make to receive full credit. (6 pts)

4. Do Problem #66 from Sec 10.3. Show all work and any sketches you make to receive full credit. (5 pts)