Name_____

Student I.D._____

Math 2250–4
Quiz 5
February 10, 2012

1) Consider the following system of equations

$$2x + 2y + 2z = 4$$
$$x + 2y - z = 1$$
$$-2y + 4z = 3$$

Exhibit the augmented matrix corresponding to this system, compute its reduced row echelon form, and find the solution set to the system.

(7 points)

2) Consider the matrix equation

$$\begin{bmatrix} 1 & -2 & 3 & 4 \\ 5 & -2 & 7 & 3 \\ 3 & 2 & 1 & -5 \end{bmatrix} \begin{bmatrix} x_1 \\ x_2 \\ x_3 \\ x_4 \end{bmatrix} = \begin{bmatrix} 0 \\ 0 \\ 0 \end{bmatrix}.$$

Without finding the solution set explicitly, explain which of the following three outcomes are possible for the solution set, just based on the number of equations, the number of unknowns, and the right hand side: (a) no solutions; (b) exactly one solution; (c) infinitely many solutions.

(3 points)