Name: _____

Quiz 1

This quiz is graded out of 13 marks. No books, watches, notes or cell phones are allowed. You must show all your work, the correct answer is worth 1 mark the remaining marks are given for the work. If you need more space for your answer use the back of the page.

Question 1. §1.1 TF Determine whether the statement is true or false, and justify your answer.

    a. *(2 marks)* Multiplying a row of an augmented matrix through by zero is an acceptable elementary row operation.

Question 2. *(3 marks)* §1.1 #20a) Find all values of k for which the given augmented matrix corresponds to a consistent linear system.

$$\begin{bmatrix} 3 & -4 & k \\ -6 & 8 & 5 \end{bmatrix}$$

Question 2. *(3 marks)* Given the linear system $\begin{cases} x - y + z = b_1 \\ 2x - 2y - 2z = b_2 \\ x + 3y - 5z = b_3 \end{cases}$. Determine the b_i if the linear system has the particular solution $(3, -2, 1)$.

Question 3. *(3 marks)* You have a system of k equations in two variables, $k \geq 2$. Explain the geometric significance of

    a. No solution.

    b. A unique solution.

    c. An infinite number of solutions.

Question 4. *(2 marks)* Is there a two-unknowns linear system whose solution set is all of $\mathbb{R}^2$?