Name: _____
Student ID: _____

Quiz 1

This quiz is graded out of 10 marks. No books, calculators, 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 #1d *(1 mark)* Determine whether the equation is linear in x_1, x_2, and x_3:

$$x_1^{-2} + x_2 + 8x_3 = 5$$

Question 2. §1.1 #2a *(1 mark)* Determine whether the equations form a linear system.

$$\begin{array}{rcrcrcl} -2x & + & 4y & + & z & = & 2 \\ 3x & - & \frac{2}{y} & & & = & 0 \end{array}$$

Question 3. §1.1 #11c *(2 marks)* Find a system of linear equations correcponding to the given augmented matrix.

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

Question 3. §1.1 #14a *(2 marks)* Find the augmented matrix for the given system of linear equations

$$\begin{array}{rcrcl} 3x_1 & - & 2x_2 & = & -1 \\ 4x_1 & - & 5x_2 & = & 3 \\ 7x_1 & + & 3x_2 & = & 2 \end{array}$$

Question 4. §1.1 #TFb *(2 marks)* Determine whether the statement is true or false, and justify your answer.
Multiplying a linear equation through by zero is an acceptable elementary row operation?

Question 5. §1.1 #TFd *(2 marks)* Determine whether the statement is true or false, and justify your answer.
A single linear equation with two or more unknowns must always have infinitely many solutions?