

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. (2 marks) Is the following a linear equations in the variables x_1 , x_2 and x_3 , justify.

$$x_1^{-2} + 3x_2 + x_3 = 2$$

Question 2. (2 marks) Find the system of linear equations corresponding to the following augmented matrix.

$$\left[\begin{array}{cccc|c} -1 & 2 & 8 & 11 & \\ 2 & 1 & 9 & -1 & \\ -4 & -8 & 0 & 0 & \end{array} \right]$$

Question 3. (2 marks) Is the following matrix in reduced row-echelon form, justify.

$$\left[\begin{array}{ccc|c} 0 & 1 & 0 & \\ 1 & 0 & 0 & \\ 0 & 0 & 0 & \end{array} \right]$$

Question 4. (2 marks) Is the following matrix in row-echelon form, justify.

$$\left[\begin{array}{ccc|c} 1 & 3 & 2 & \\ 0 & 0 & 0 & \\ 0 & 0 & 1 & \end{array} \right]$$

Question 5. (2 marks) Suppose that the augmented matrix for a system of linear equations has been reduced by row operations to the given reduced row-echelon form. Solve the system.

$$\left[\begin{array}{cccc|c} 1 & 0 & -1 & 0 & 3 \\ 0 & 1 & 2 & 0 & -2 \\ 0 & 0 & 0 & 1 & 4 \end{array} \right]$$