

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 #5d (2 marks) Determine whether the following system is consistent.

$$x_1 + x_2 = x_3 + x_4$$

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

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

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

$$\begin{array}{rrcrcl} 2x_1 & & & + & 2x_3 & = & 1 \\ 3x_1 & - & x_2 & + & 4x_3 & = & 7 \\ 6x_1 & + & x_2 & - & x_3 & = & 0 \end{array}$$

Question 4. §1.1 #7b (2 marks) Determine whether the given vector $(3, -1, 1)$ is a solution of the linear system

$$\begin{array}{rrrrcl} 2x_1 & - & 4x_2 & - & x_3 & = & 1 \\ x_1 & - & 3x_2 & + & x_3 & = & 1 \\ 3x_1 & - & 5x_2 & - & 3x_3 & = & 1 \end{array}$$

Question 5. §1.1 #TF (2 marks) Determine whether the statement is true or false, and justify your answer.

The linear system with corresponding augmented matrix

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

is consistent.