

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

The linear system

$$x - y = 3$$

$$2x - 2y = k$$

cannot have a unique solution, regardless of the value of  $k$ .

**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

$$2x_1 \quad \quad + \quad 2x_3 = 1$$

$$3x_1 - x_2 + 4x_3 = 7$$

$$6x_1 + x_2 - x_3 = 0$$

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

$$2x_1 - 4x_2 - x_3 = 1$$

$$x_1 - 3x_2 + x_3 = 1$$

$$3x_1 - 5x_2 - 3x_3 = 1$$

**Question 5.** §1.1 #4c (2 marks) Determine whether the following system is consistent.

$$x = 4$$

$$2x = 8$$