

## Quiz 2

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.** §1.2 #3c (3 marks) In each part, suppose that the augmented matrix for a system of linear equations has been reduced by row operations to the given row echelon form. Solve the system.

$$\begin{bmatrix} 1 & 7 & -2 & 0 & -8 & -3 \\ 0 & 0 & 1 & 1 & 6 & 5 \\ 0 & 0 & 0 & 1 & 3 & 9 \\ 0 & 0 & 0 & 0 & 0 & 0 \end{bmatrix}$$

**Question 2.** §1.2 #2d (2 marks) In each part, 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.

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

**Question 3.** §1.2 #28 (5 marks) Determine the values of  $a$  for which the system has no solutions, exactly one solution, or infinitely many solutions

$$\begin{array}{rclcl} x & + & y & + & 7z & = & -7 \\ 2x & + & 3y & + & 17z & = & -16 \\ x & + & 2y & + & (a^2+1)z & = & 3a \end{array}$$