Name: _____

Student ID: _____

Quiz 10

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. *(5 marks)* §3.4 #19 Find the general solution to the linear system and confirm that the row vectors of the coefficient matrix are orthogonal to the solution vector.

$$\begin{aligned} x_1 + 5x_2 + x_3 + 2x_4 - x_5 &= 0 \\ x_1 - 2x_2 - x_3 + 3x_4 + 2x_5 &= 0 \end{aligned}$$

Question 2. *(5 marks)* §3.4 #21

a. The equation $x + y + z = 1$ can be viewed as a linear system of one equation in three unknowns. Express a general solution of this equation as a particular solution plus a general solution of the associated homogeneous system.

b. Give a geometric interpretation of the result in part a..