Name: _____

Student ID: _____

Assignment 2

This assignment is graded out of 10 marks. 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 mark)* Write the equation of the plane $-3x + 2y - 7z = 21$ in parametric form.

Question 2. *(1 mark)* Write the equation of the plane $(x, y, z) = (2, -1, 4) + s(3, 1, 3) + t(-2, -1, 2)$ where s, $t \in \mathbb{R}$ in general form.

Question 3. *(3 marks)* Find the distance between the point $P(3, 4, 5)$ and the plane $(x, y, z) = (1, 0, 3) + s(2, -1, 0) + t(3, 0, -1)$ where s, $t \in \mathbb{R}$.

Question 4. *(2 marks)* Find the distance between the line $(x, y, z) = (2+t, 2, 5+3t)$ and the plane $3x - 4y - z = 20$.

Question 5. *(3 marks)* Find the distance between the two parallel planes: $2x - y + z = 1$ and $-4x + 2y - 2z = -1$.