Name: _____
Student ID: _____

Quiz 9

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 mark)* §3.4 #1 Find the parametric equation of the line containing the point and parallel to the vector. Point: $(-4,1)$; vector: $\vec{v} = (0,-8)$.

Question 2. *(1 mark)* §3.4 #9 Find the parametric equation of the plane containing the point and parallel to the vector. Point: $(-3,1,0)$; vector: $\vec{v_1} = (0,-3,6)$ and $\vec{v_2} = (-5,1,2)$.

Question 3. *(3 marks)* §3.4 #9 Find the parametric equations of the plane in R^3 that passes through the origin and is orthogonal to $\vec{v} = (4,0,-5)$

Question 4. §3.4 #23

a. *(1 mark)* Find a homogeneous linear system of two equations in three unknowns whose solution space consistes of those vectors in R^3 that are orthogonal to $\vec{a} = (1,1,1)$ and $\vec{b} = (-2,3,0)$.

b. *(2 marks)* What kind of geometric object is the solution space?

c. *(2 marks)* Find a general solution of the system obtained in part a.