Name: _____

Student ID: _____

Quiz 8

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. Let $A = (0, 2, -1)$, $B = (3, 0, -3)$, $P = (-1, 1, -1)$, $\mathbf{u} = (-3, 2, 1)$ and $\mathbf{v} = (2, 1, -5)$.

   a. *(2 marks)* Find the angle between $\mathbf{u}$ and $\mathbf{v}$.

   b. *(2 marks)* Find a unit vector orthogonal to both $\mathbf{u}$ and $\mathbf{v}$

   c. *(6 marks)* Using projections find the distance from point P to the line that passes through the points A and B.