

Name: _____
Student ID: _____

Quiz 7

This quiz is graded out of 10 marks. No books, 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. (4 marks) Let $\mathbf{u} = (1, 2, -1)$, $\mathbf{v} = (2, -2, -2)$, $\mathbf{w} = (2, -1, -3)$. Find the volume of the parallelepiped with sides \mathbf{u} , \mathbf{v} , \mathbf{w} .

Question 2.

- a. (3 marks) Find a vector that is orthogonal to both $\mathbf{x} = (1, -2, 2)$ and $\mathbf{y} = (-2, 2, -3)$.
- b. (1 marks) Find the area of the parallelogram determined by \mathbf{x} and \mathbf{y} .

Question 3. (2 marks) Find a vector \mathbf{v} that is orthogonal to the vector $\mathbf{u} = (2, -5, 3)$.