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. §3.5 #10 *(2 marks)* Find the area of the parallelogram determined by the given vectors **u** and **v**.

$\mathbf{u} = (1,1,1) \quad \mathbf{v} = (3,2,-5)$

Question 2. §3.5 #16 *(4 marks)* Find the area of the triangle in 3-space that has the given vertices

$P(1,-1,2) \quad Q(0,3,4) \quad R(6,1,8)$

Question 3. §3.5 #18 *(4 marks)* Find the volume of the parallelepiped with sides **u**, **v**, **w**.

$\mathbf{u} = (3,1,2) \quad \mathbf{v} = (4,5,1), \quad \mathbf{w} = (1,2,4)$