

## Quiz 12

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.** Supplementary Exercises #1.4.1 (6 marks) Write the parametric equation of the line that passes through the point of intersection and orthogonal of both lines, where  $\vec{x} = (2, 1, 1) + t(5, 1, -2)$  and  $\vec{x} = (-2, -1, 2) + t(3, 1, -1)$ .

**Question 2.** §3.5 #18 (3 marks) Find the volume of the parallelepiped with sides  $\vec{u} = (3, 1, 2)$ ,  $\vec{v} = (4, 5, 1)$ , and  $\vec{w} = (1, 2, 4)$

**Question 3.** §3.5 #26c (1 mark) Suppose that  $\vec{u} \cdot (\vec{v} \times \vec{w}) = 3$ . Find  $\vec{v} \cdot (\vec{w} \times \vec{u})$