B16.

MATH 1300: Quiz #4

Name _____ **Student number** _____

1. Given $\mathbf{u} = (1,2,3)$ and $\mathbf{v} = (-2,1,0)$ compute $\mathbf{u} \times \mathbf{v}$.

2. Find the parametric equations of the line passing through the point $P(1,2,3)$ and orthogonal to the plane $x - y + z = 3$.

3. We are given $\mathbf{u} = (1,-2,1,2)$ and $\mathbf{v} = (1,1,0,3)$.

(a) Find the distance $d(\mathbf{u},\mathbf{v})$ between $\mathbf{u}$ and $\mathbf{v}$.

(b) Compute $\mathbf{u} - 3\mathbf{v}$.

(c) Write any four-dimensional vector that is orthogonal to $\mathbf{u}$.