
Show all work. 5 points each.

1. Find the $proj_{\mathbf{a}}\mathbf{b}$ where $\mathbf{a} = \mathbf{i} + \mathbf{j} + \mathbf{k}$ and $\mathbf{b} = \mathbf{i} - \mathbf{j} + \mathbf{k}$

2. Find $\mathbf{a} \times \mathbf{b}$ and verify it is orthogonal to both $\mathbf{a} = \langle 1, 3, -2 \rangle$ and $\mathbf{b} = \langle -1, 0, 5 \rangle$