

Show all work clearly and in order, and circle your final answers. Justify your answers.

PROBLEM ONE For $\vec{a} = \langle 1, 2, 3 \rangle$ and $\vec{b} = \langle 0, 2, 4 \rangle$, find $2\vec{a} + \vec{b}$ and $\vec{a} \cdot \vec{b}$.

PROBLEM TWO Let $\vec{u} = \langle 2, 3, -1 \rangle$. Find a unit vector in the direction of \vec{u} . Let $\vec{v} = \langle 2, 2, 3 \rangle$. Are \vec{u} and \vec{v} parallel, orthogonal, or neither?