

(4) 1. Find the angle between the vectors $\vec{a} = \langle 3, -1, 4 \rangle$ and $\vec{b} = \langle 2, 5, 1 \rangle$. (Express your answer to the nearest tenth of a degree.)

(6) 2. Express the vector $\vec{b} = \langle 1, 2, 1 \rangle$ as the sum of two vectors \vec{a}_1 and \vec{a}_2 , where \vec{a}_1 is parallel to $\vec{a} = \langle 2, 3, 6 \rangle$ and \vec{a}_2 is orthogonal to \vec{a} .