

(4) 1. Find the angle between the vectors  $\vec{a} = \langle 2, -1, 3 \rangle$  and  $\vec{b} = \langle 3, 2, 1 \rangle$ . (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  $\vec{a}$ .