MATH 243: SECTION 12.4 GROUPWORK

(1) Consider the vectors $\vec{a} = \langle 1, 2, 3 \rangle$ and $\vec{b} = \langle 2, 1, 4 \rangle$. Compute $\vec{a} \times \vec{b}$. Use this to determine $\vec{b} \times \vec{a}$ without computing it directly.
(2) Consider the three vectors $\vec{a} = \langle 0, 3, 4 \rangle$, $\vec{b} = \langle -1, -1, -1 \rangle$, $\vec{c} = \langle 2, -1, 3 \rangle$. Compute the volume of the parallelepiped given by these three vectors by computing their triple product $\vec{a} \cdot \vec{b} \times \vec{c}$.
(3) Find both unit vectors orthogonal to both $\vec{\imath} - \vec{\jmath}$ and $\vec{\imath} + \vec{k}$.