Welcome Back

1. Opposite vertices of a rectangular box whose edges are parallel to the coordinate axes are $(1, \ 0, \ 2)$ and $(2, \ 3, \ 4)$
List the coordinates of the other six vertices of the box.

2. Find the magnitude and the direction cosines of the vector $\vec{v} = \vec{i} + 2\vec{j} + 3\vec{k}$

3. Find a unit vector in the direction of $\vec{v} = \vec{i} + 2\vec{j} + 3\vec{k}$

4. Find the angle between the vectors $\vec{v} = 3\vec{i} + \vec{j} - 2\vec{k}$ and $\vec{w} = 5\vec{i} - \vec{j} + \vec{k}$

True or False?

6. The direction of $\vec{w} \times \vec{u}$ is determined by the right hand rule.

7. Since $\vec{i} \ and \ \vec{j}$ are orthogonal, $\vec{i} \times \vec{j} = \vec{0}$

8. The cross product is a commutative operation

9. If $\vec{v}$ and $\vec{w}$ are two nonzero vectors, then $(\vec{v} \times \vec{w}) + (\vec{w} \times \vec{u}) = \vec{0}$

10. If θ is the angle between two nonzero vectors $\vec{v}$ and $\vec{w}$, then $\vec{v} \ \| \vec{v} \times \vec{w} \| = \| \vec{v} \| \| \vec{w} \| \cos \theta$