

Instructions: Show all work. Use exact answers unless otherwise asked to round.

1. Use $\vec{u} = \langle 2, -1, 3 \rangle$, $\vec{v} = \langle -1, 4, 0 \rangle$ to find the following:

a. Find $\vec{u} \cdot \vec{v}$

b. The angle between \vec{u} and \vec{v} .

c. Are the two vectors orthogonal? Why or why not?

2. Given the vectors $\vec{u} = \langle -1, 2, 3 \rangle$, $\vec{v} = \langle 3, 0, 1 \rangle$, find the following:

a. $\vec{u} \times \vec{v}$

b. $\|\vec{u} \times \vec{v}\|$