

Show all work. 5 points each.

1. Let $\mathbf{a} = \langle -2, 5 \rangle$ and $\mathbf{b} = \langle 5, 12 \rangle$

i) Find the angle between the two vectors. (you do not need to simplify)

ii) Illustrate (draw) the associated triangle (or parallelogram) formed by $\mathbf{a} + \mathbf{b}$, \mathbf{a} and \mathbf{b} .

2. Let $\mathbf{a} = \langle 6, 0, -2 \rangle$ and $\mathbf{b} = \langle 0, 8, 0 \rangle$. Find the cross product $\mathbf{a} \times \mathbf{b}$ and verify that it is orthogonal to both \mathbf{a} and \mathbf{b} .