Quiz 2 (Problems)

1. Using $\mathbf{u} = \langle 8, -4, 1 \rangle$ and $\mathbf{v} = \langle -4, 4, 2 \rangle$,
    a. Find $\|\mathbf{u}\|$ and $\|\mathbf{v}\|$.
    b. Find $\mathbf{u} \cdot \mathbf{v}$.
    c. Find the angle θ between $\mathbf{u}$ and $\mathbf{v}$.
    d. Find $\text{proj}_{\mathbf{v}}\mathbf{u}$.
    e. Find $\mathbf{u} \times \mathbf{v}$.

Quiz 2 (Answers)

1. (Math-252 Quiz 2)

   a. $\|\mathbf{u}\| = 9$, $\|\mathbf{v}\| = 6$

   b. $\mathbf{u} \cdot \mathbf{v} = -46$

   c. $\theta = \arccos\left(-\frac{23}{27}\right) = 148.4°$

   d. $\text{proj}_{\mathbf{v}}\mathbf{u} = \langle -\frac{46}{9}, -\frac{46}{9}, -\frac{23}{9} \rangle$

   e. $\mathbf{u} \times \mathbf{v} = \langle -12, -20, 16 \rangle$