

Math 233 - Quiz 2

August 27, 2026

Name _____

Score _____

Show all work to receive full credit. Supply explanations when necessary.

1. (2 points) Find a unit vector that is orthogonal to $\vec{w} = 2\hat{i} + 8\hat{j} - 7\hat{k}$.
2. (3 points) Find the measure of the angle at vertex B in triangle ABC . Write your answer in degrees, rounded to the nearest tenth.

$$A(1, 1, 3), \quad B(3, 6, 5), \quad C(-1, -2, 5)$$

3. (1 point) Find the projection of $\vec{b}$ onto $\vec{a}$, where $\vec{a} = -\hat{i} + 3\hat{j} - \hat{k}$ and $\vec{b} = 2\hat{i} - \hat{j} + 2\hat{k}$.
4. (2 points) Find the measure of the angle that $\vec{s} = 5\hat{i} + 2\hat{j} - 4\hat{k}$ makes with the positive x -axis.
5. (2 points) Let $\vec{u} = \hat{i} + 2\hat{j} + 3\hat{k}$ and $\vec{w} = 2\hat{i} - 3\hat{j} - 4\hat{k}$. Compute $\vec{w} \times \vec{u}$.