Math 233 - Quiz 2 (IC)

Name _____

September 1, 2022

Score _____

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

1. (2 points) Find a unit vector that is orthogonal to $\vec{w} = 2\hat{\imath} + 8\hat{\jmath} - 7\hat{k}$.

2. (2 points) Find the measure of the angle at vertex B in triangle ABC. Write your answer in degrees, rounded to the nearest tenth.

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

3. (1 point) Find the projection of $\vec{y}$ onto $\vec{x}$, where $\vec{x} = -\hat{\imath} + 3\hat{\jmath} - \hat{k}$ and $\vec{y} = 2\hat{\imath} - \hat{\jmath} + 2\hat{k}$.

Math 233 - Quiz 2 (TH)

Name _____

September 1, 2022

Score _____

Show all work to receive full credit. Supply explanations when necessary. This quiz is due September 6.

---

1. (2 points) Find a unit vector that is orthogonal to both $\vec{x} = -5\hat{\imath} + 3\hat{\jmath} - \hat{k}$ and $\vec{y} = 3\hat{\imath} - \hat{\jmath} + 2\hat{k}$.

2. (1 point) If $\vec{u} \cdot \vec{v} = \vec{u} \cdot \vec{w}$, must it be true that $\vec{v} = \vec{w}$?

3. (2 points) Find parametric and symmetric equations for the line through the points $P\,(5, 7, -3)$ and $Q\,(6, -2, 3)$.