Math 233 - Quiz 3

Name _____

September 7, 2023

Score _____

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

1. (3 points) Find the area of $\triangle ABC$, where

$$A\,(1,-2,4), \qquad B\,(-2,7,3), \qquad C\,(5,5,-3).$$

2. (3 points) Find a unit vector that is orthogonal to both $\vec{u} = 3\hat{\imath} + \hat{\jmath} + 5\hat{k}$ and $\vec{w} = -4\hat{\imath} + 2\hat{\jmath} - 6\hat{k}$.

3. (3 points) Find parametric and symmetric equations for the line passing through $(1,-3,5)$ and $(8,9,-2)$.

4. (1 point) What does it mean for two vectors to be orthogonal?