Math 304, Section 5 — Quiz 4 – February 13

Name:_____

1. Suppose $\mathbf{v} = (1, 2, 3)$ and $\mathbf{w} = (-2, 2, -1)$. Find the dot product $\mathbf{v} \cdot \mathbf{w}$.

2. If $\mathbf{v} = (1, 2, 3)$, find a nonzero vector $\mathbf{u}$ such that $\mathbf{u} \cdot \mathbf{v} = 0$, or show that no such vector exists.

3. Let $\mathbf{w} = (-2, 2, -1)$. Find the length of $\mathbf{w}$.

4. Suppose $\mathbf{a}$ is a vector of length 2, and $\mathbf{b}$ is a vector of length 3. Is it always true that $|\mathbf{a} \cdot \mathbf{b}| \leq 7$? Why or why not?