Math 53 - Multivariable Calculus

Quiz # 4

February 10th, 2012

Exercise 1. *Find two UNIT vectors orthogonal to both* $\langle 1, -1, 1\rangle$ *and* $\langle 0, 4, 4\rangle$.

Exercise 2. *Suppose that* $\vec{\boldsymbol{A}}$ *is not the zero vector,* $\vec{\boldsymbol{A}} \neq \vec{\mathbf{0}}$. *If* $\vec{\boldsymbol{A}} \cdot \vec{\boldsymbol{B}} = \vec{\boldsymbol{A}} \cdot \vec{\boldsymbol{C}}$, *does it follow that* $\vec{\boldsymbol{B}} = \vec{\boldsymbol{C}}$*?If* $\vec{\boldsymbol{A}} \times \vec{\boldsymbol{B}} = \vec{\boldsymbol{A}} \times \vec{\boldsymbol{C}}$, *does it follow that* $\vec{\boldsymbol{B}} = \vec{\boldsymbol{C}}$*? If* $\vec{\boldsymbol{A}} \cdot \vec{\boldsymbol{B}} = \vec{\boldsymbol{A}} \cdot \vec{\boldsymbol{C}}$ *and* $\vec{\boldsymbol{A}} \times \vec{\boldsymbol{B}} = \vec{\boldsymbol{A}} \times \vec{\boldsymbol{C}}$, *does it follow that* $\vec{\boldsymbol{B}} = \vec{\boldsymbol{C}}$*?*

Exercise 3. *Find the equation of the plane through the origin and parallel to the plane* $2x - y + 3z = 1$.