Math 321 Quiz 2

Oct. 1/3, 2012

Your Name: *Your Section:*

Instructions: 15 minutes. Discussion within **pairs**. *ESC is assumed. All vectors are in 3D space and the orthonormal basis* $\{\vec{e}_1, \vec{e}_2, \vec{e}_3\}$ *is used.*

- Consider $(\vec{a} \times \vec{b}) \cdot (\vec{a} \times \vec{b})$. Our goal is to write it in terms of dot products only.

  1). Use vector identity to do this. (4')

  2). Use index notation. (6')

- (Bonus) Show that $\epsilon_{jki} a_i a_k$ is 0. (3')