Math 224 Quiz 3 Name: _____

January 27, 2004

Show all work for credit.

1. Find the cross product $\vec{a} \times \vec{b}$

   (a) $\vec{a} =< 1, -1, 0 >$, $\vec{b} =< 3, 2, 1 >$

   (b) $\vec{a} = \mathbf{i} - \mathbf{j} + \mathbf{k}$, $\vec{b} = \mathbf{i} + \mathbf{j} + \mathbf{k}$

2. State whether each expression is meaningful. If not, explain why. If so, state whether it is a vector or a scalar.

   (a) $\vec{a} \times (\vec{b} \cdot \vec{c})$

   (b) $(\vec{a} \cdot \vec{b}) \times (\vec{c} \cdot \vec{d})$

   (c) $(\vec{a} \times \vec{b}) \cdot (\vec{c} \times \vec{d})$