Please sign your name: _____

Math 335-002 * Spring 2015 * Quiz #1

1. Consider the following vector operations. Which of them do/does not make sense? If the expression is valid, indicate whether the result is a vector or a scalar (number)

   a) $((\vec{a} \times \vec{b}) \cdot \vec{b}) \times \vec{c}$
   b) $((\vec{a} \times \vec{b}) \times \vec{b}) \cdot \vec{c}$
   c) $(2\vec{a} + \vec{b}) \cdot (\vec{a} - \vec{b}) \times \vec{c}$
   d) $(\vec{a} + \vec{b}) \cdot (\vec{a} - \vec{b}) \cdot \vec{c}$
   e) $((\vec{a} \times \vec{b}) \times \vec{b}) \times \vec{c}$

2. Write down an equation of plane containing points (0,1,2), (1,2,3) and (1,2,1) (hint: first, you will need a cross product to find the normal to this plane)

3. Find the derivative of the following function: $f(x) = x\ln(xe^x)$