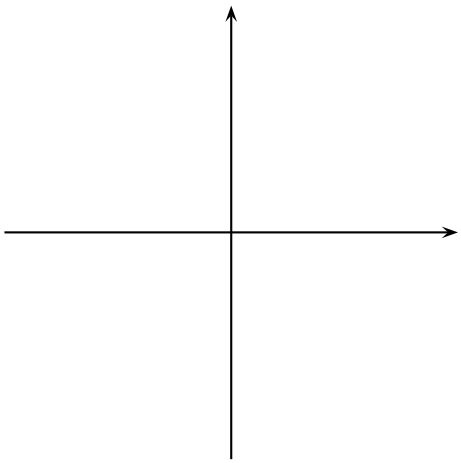
MA 120-04 §3.3 – 4.	**Quiz #4**	*score*	**Name:** _____ **7 March 2003**

1. Calculate the derivatives of the following functions.

   (a) $f(x) = x^2 \ln x$ *(5 points)*

   (b) $f(t) = \frac{1+t^2}{1-t^2}$ *(5 points)*

2. Let $f(x) = xe^x + 1$. Find an equation of the tangent line to the graph of $f(x)$ at $x = 0$. Sketch the graph of $f(x)$ along with the tangent line at $x = 0$ using the x-interval $[-1, 1]$. *(5 points)*



3. Suppose you know that $f'(x) = x^2 - 1$. Find the critical points of $f(x)$ and for each one determine if it is a relative maximum or minimum. Explain. *(5 points)*