Quiz **Name:**_____

Calculus 1551, Section 4. October 5, 2009

Find the derivatives:

Let m and n be positive integers. Find and *simplify* $f'(x)$, if $f(x) = x^n(\ln x)^m$.

If $g(x) = \ln(\cos(x))$, then $g'(x) =$

If $h(x) = \ln(\tan(x))$, then $h'(x) =$

Find the first three derivatives of $\arctan x$.

Suppose $f(x) > 0$ for all x in the domain of f. Find $\frac{d}{dx} f(x)^{g(x)}$, using the fact that $A^B = e^{B \ln A}$.