

## Differentiation Skills Test --- Calculus II

Compute the derivative of each of the functions and simplify your answer. Calculator use is **NOT** allowed on this test, and no partial credit will be awarded.

1.  $f(x) = e^{x^2}$

2.  $f(x) = xe^{3x}$

3.  $f(x) = \ln(x^2 + 1)$

4.  $f(x) = \frac{\tan^{-1}(2x)}{x}$

5.  $f(x) = (\sin x) \ln x$

6.  $f(x) = x \sin^{-1} x$

7.  $f(x) = \frac{x}{\ln x}$

8.  $f(x) = \sin^{-1} x^2$

9.  $f(x) = \tan^{-1} 3x$

10.  $f(x) = 7e^x - 3 \ln x$