

Name: \_\_\_\_\_

Math 105A: Fall 2012

Quiz 4: October 31

Correct answers accompanied by incorrect or incomplete work will not receive full credit. Good Luck!

1. Find the derivative of  $f(x) = \frac{\arctan(x^3)}{x^5}$

2. Consider the equation  $x^2y + x^4y^3 = 10x$ .

(a) Use implicit differentiation to find a formula for  $\frac{dy}{dx}$  for the equation.

(b) The point  $(1, 2)$  is on the graph of the equation. Find the slope of the line tangent to the graph of the equation at the point  $(1, 2)$ .

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3. Find the derivative of  $y = \ln(2 + \sin(3x))$ .