

Math 113  
Quiz 4

Find the derivatives of the following functions:

1)  $g(x) = \sqrt{x} \sin x$

2)  $h(t) = \frac{t^2 + 2}{2t - 7}$

3)  $f(x) = e^{-x^2}$

4)  $p(x) = \sin(x^3)$

5)  $m(x) = \ln(x^2 + 1)$

6) Use the quotient rule to prove that  $\frac{d}{dx}[\cot x] = -\csc^2 x$

7) Find  $dy/dx$  by implicit differentiation for  $x^3 y^3 - y = x$