MAC 2311: Worksheet #12 Fall 2016 (Chain Rule)

1) Use the chain rule and other rules of differentiation as needed to compute the derivatives of the following functions

a) $\dfrac{1}{\sqrt{1+x^2}}$

b) $\cos^2(3x)$

c) $x\left(x^9+2\right)^{1/2}$

d) $e^{x \cos(x)}$

e) $\sqrt{\csc\left(\sin^2 x\right)}$

f) $\sec(3 + x^2 \tan(3x))$

3) Consider the function $y = \sqrt{x^2 - 9}$. Find the equation of the line tangent to this function at $x = 5$.