

King Fahd University of Petroleum & Minerals

Department of Mathematical Sciences

MATH - 101-01

Semester 131

Quiz - 3

Name: _____ ID# _____

Problem 1.

(A) Let $f(x) = x^2 - 4x - 5$. Find the value of $\frac{df^{-1}}{dx}$ at the point $x = 0 = f(5)$.

(B) Use logarithmic differentiation to find the equation of the line that is tangent to the curve $y = \frac{x\sqrt{x^2+1}}{(x+1)^{2/3}}$ at $x = 0$.

Problem 2. Find $\frac{dy}{dx}$ if

(a) $y = \ln(\tan^{-1} x)$

(b) $y = \cos^{-1}\left(\frac{1}{x}\right)$