

Department of Mathematics and Statistics KFUPM
MATH 101-08 Quiz#3, Time: 50 mins

Student's Name: _____ ID: _____ Section No: _____

Class Time: _____ Instructor's Name: _____

Q.No.1:- Let $f(x) = \sin^{-1}\left(\frac{x-1}{x+1}\right) - 2 \tan^{-1} \sqrt{x}$; $x \geq 0$

Find $f'(x)$

Q.No.2:- Let $f(x) = \frac{x}{1 - \ln(x-1)}$, find $f'(x)$

Q.No.3:- If $x^3 + y^3 = 16$, then find $\frac{d^2y}{dx^2}$ at the point (2,2).

Q.No.4:- Find the equation of the tangent and normal lines to the graph of the function $y = \frac{\sin x}{1 - \cos x}$ when $x = \pi$.