

Department of Mathematics and Statistics, KFUPM

Math-101 Semester-183 QUIZ III

NAME:

S.No.

ID:

Maximum Marks: 7.5

Section:14

Time Allowed: 35 minutes

(1) If $f(x) = \frac{e^{(x^2 + 1)}}{2^x - 1}$, find $f'(x)$.

(2) Find $\frac{dy}{dx}$, if (a) $y = \sqrt{x^2 + \sqrt{\cos^{-1}(x^2 - 1)}}$ (b) $x^3 + y^{\frac{3}{2}} - 9xy = 0$

(3) If the tangent line to the graph of $y = x^2 - 2x + 9$ at the point $P(\alpha, \beta)$, where $\alpha < 0$, passes through the point $(2, 0)$, then find the value of β .