King Fahd University of Petroleum and Minerals
Department of Mathematics and Statistics
Math-201 Semester-143 QUIZ I

NAME: S.No. ID:

Maximum Marks: 10 Section: Time Allowed: 40 minutes

(1) Sketch the graph of the parametric equations $x = t + 2, y = t^3 - 2t$ and mark the direction in which the curve is defined for $-2 \leq t \leq 2$. Also, eliminate the parameter t to find corresponding cartesian equation.

(2) Find the equation(s) of the tangent(s) to the curve $x = t^2, y = t^3 - 3t$ that pass through the point $(3, 0)$.

(3) Find the length of the curve $x = e^t - t, y = 4e^{\frac{t}{2}}, \quad -8 \leq t \leq 3$.

(4) Graph the set of points whose polar coordinates satisfy the conditions
$-3 \leq r \leq 2$ and $\theta = \frac{\pi}{4}$.

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