

King Fahd University of Petroleum & Minerals
Department of Mathematics and Statistics

Math 101-27-Term141-Quiz.5

Name: _____

ID: _____ Serial#: _____

Q1. Find the critical points and the extreme values of the function given by

$$f(x) = \begin{cases} 3 - x, & x < 0 \\ 3 + 2x - x^2, & x \geq 0 \end{cases} .$$

Q2. Check the conditions of the mean value theorem for

$$f(x) = \sqrt{x(1-x)}.$$

Q3. Given that $f'(x) = 1 - \frac{4}{x^2}$ find the intervals where f is increasing, decreasing and its extreme values.

Q4. If b, c, d are constants, for what value of b will the curve $y = x^3 + bx^2 + cx + d$ have a point of inflection at $x = 1$.