

King Fahd University of Petroleum and Minerals
Department of Mathematics and Statistics
Math 101-26/Term 131 -Quiz 5

Name:.....ID#:.....Serial#.....

Messy work will not be graded.

1. Find the critical points of $f(x) = (x + 5)^2(x - 4)^{1/3}$.

2. State the conditions of Rolle's Theorem for the function f given by $f(x) = 4x^2 - 20x + 29$ on the interval $[1, 4]$.
Find the value of the critical point.

3. Apply the Mean Value Theorem to $f(x) = \frac{x^2}{4} + 1$ on the interval $[-1, 4]$.

4. Use the second order derivative test for finding local extrema of $f(x) = -x^4 + 2x^2 + 12$ and discuss concavity.