

King Fahd University of Petroleum and Minerals

MATH-101

Dr. M. Jarrar

Quiz 4

Name:-

ID:-

Sec.:- 2

S.N.:-

Q1) Given $f(x) = (\ln x)^2$ and $g'(x) = \frac{2 \ln x}{x}$, $g(1) = 5$. Please find $g(x)$. (2 points)

Q2) $f(x) = |1 + |x||$. Find the extreme values of $f(x)$ on $[-2, 3]$. (4 points)

The absolute maximum is

The absolute minimum is

Q3) $f(x) = \begin{cases} ax + bx^2 & 0 \leq x < 3 \\ kx + 9 & 3 \leq x \leq \frac{9}{2} \end{cases}$.

If $f(x)$ satisfies the conditions of Rolle's Theorem, then find the values of a , b and k and then find all numbers c that satisfy the conclusion of Rolle's Theorem. (4 points)

a =
b =
k =
c =