

KFUPM - Math Dept. - MATH 101
Quiz 7 (3.10 & 4.2) - Term 171 - Instructor: Dr. Shadi Al-Omari

Name: _____ ID: _____ S.N.: _____

Show all your work

Question1: (5 pts) If $f(1) = -1$ and $f'(x) \leq 2$ for all x . Find the largest possible value of $f(2)$.

Question2: (5 pts) If $L(x)$ is the linearization of $f(x) = 1 + \ln(1 - 2x)$ near $a = 0$, then find $L(-1)$.

Question3 : (5 pts) Find the values of the constants a, b, c and d , so that $f(x) = ax^3 + bx^2 + cx + d$ has a local maximum at the point $(0, 0)$ and a local minimum at the point $(1, -1)$.

Question3 : (5 pts) Evaluate $\lim_{x \rightarrow 1} [(x - 1) \coth(\ln x)]$.