KFUPM MATH101 Quiz#7 Sec. 32

Name Sr.#

Q1. $f(x) = x^{2/3}(6-x)^{1/3}$, $f'(x) = \dfrac{4-x}{x^{1/3}(6-x)^{2/3}}$, $f''(x) = \dfrac{-8}{x^{4/3}(6-x)^{5/3}}$

a) Find the intervals on which ***f*** is increasing or decreasing.

b) Find the local maximum and minimum values of ***f.***

c) Find the intervals of concavity and the inflection points.

Q2. If $f(3) = 2$ *and* $f'(x) \geq 3$ *for* $1 \leq x \leq 3$, how large can $f(1)$ possible be?