KFUPM MATH101 Quiz#6 Sec. 1

Name Sr.#

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

$$f''(x) = \frac{-8}{x^{4/3}(6-x)^{5/3}}$$

a) Find the intervals where the graph of *f* increasing, decreasing, concave up, concave down.

b) Find the x-coordinates of local maximum, local minimum, and inflection points.

Q2.

25. If $f(1) = 10$ and $f'(x) \geqslant 2$ for $1 \leqslant x \leqslant 4$, how small can $f(4)$ possibly be?