

King Fahd University of Petroleum and Minerals
Department of Mathematics and Statistics

MATH 101.4&5
Summer (073)

QUIZ# 4
(30 Points)

1. Sketch the graph of f where:

$$f(x) = \frac{(x-1)^2}{x^2}, f'(x) = \frac{2(x-1)}{x^3}, \text{ and } f''(x) = \frac{2(3-2x)}{x^4}.$$

2. Find the linear approximation to $\sinh(x + \ln 2)$ near $x = 0$.
3. Find the area of the largest rectangle that can be inscribed in a circle of radius 4.
4. Show that the equation $1 + 2x + x^3 + 4x^5 = 0$ has exactly only one real root.