King Fahd University of Petroleum and Minerals
Department of Mathematics and Statistics
Math 101 (161) Sec 05 - Quiz 5

Name: ID: Serial No.:

1. Find $\left[\cosh\left(\frac{2x}{3}\right) + \sinh\left(\frac{2x}{3}\right)\right]^{3/4}$

2. Find the absolute maximum and absolute minimum for the function $f(x) = x\sqrt{4 - x^2}$ on $[-2, 2]$.

3. Find all $c$ that satisfies the Mean Value Theorem for $f(x) = \begin{cases} \frac{4}{3}x^3 - 4x & \text{if} \quad -3 \leq x < 0 \\ \frac{1}{3}x^3 - 4x & \text{if} \quad 0 \leq x \leq 3 \end{cases}$

4. Find the critical number(s) for the function $f(x) = 3\sin x - \sin^3 x, \quad \frac{\pi}{2} < x < 2\pi$

5. Find the interval(s) where the function $h(x) = x^{1/3}(x + 4)$ cocave downward.

6. Find the interval(s) where the graph of the function $f(x) = \dfrac{x^2 - 3}{x^3}$ is decreasing.