

King Fahd University of Petroleum and Minerals
Department of Mathematics and Statistics
Math 101 Section 21 Quiz V (Term 161)

Name : ID #..... Serial #:

1. If $\sinh x = -\sqrt{3}$, then find $\coth x$.

2. Let $f(x) = \frac{1 + \sinh x}{1 - \sinh x}$. Find $f'(\ln 2)$.

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3. If $f(x) = x^4 - x$ on $[-1, 1]$, then find the value of c that satisfies The Mean Value Theorem.

4. If $f(x) = \cos^2 x - \cos x$ in $\left[\frac{-\pi}{2}, \pi\right]$, then find the absolute maximum and absolute minimum values of $f(x)$.

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5. If $f(1) = 10$ and $f'(x) \geq 2$ for $1 \leq x \leq 4$, how small can $f(4)$ possibly be?

6. Given that $f(x) = \frac{x^2 + 1}{\sqrt{2x + 1}}$, then find the critical numbers of $f(x)$.