

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

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

1. Find $\lim_{\theta \rightarrow \frac{\pi}{6}} \frac{\cot \theta - \sqrt{3}}{\theta - \frac{\pi}{6}}$

2. Find $\lim_{\theta \rightarrow 0} \tan 3\theta \cdot \csc \theta$

3. If $f(t) = \left(\frac{1}{\sqrt{t}} - \sqrt[3]{t} \right)^2$, then find $\frac{df}{dt}$

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4. If $y = x^2 \sin x + 2x \cos x - 2 \sin x$, then find y''
5. If $y = 2e^x + 3e^e + 4x^e$, then find $y'(e)$
6. Find the values of x at which the tangent lines to the graph of $y = \frac{x-1}{x+1}$ are parallel to the line $9x - 2y + 1 = 0$.