

King Fahd University of Petroleum and Minerals  
Department of Mathematics and Statistics  
Math 101 (172) Sec 8 - Quiz 4

Name:

ID:

Serial No.:

1.  $\lim_{x \rightarrow 1^-} (2 - x)^{\tan(\frac{\pi x}{2})}$

2.  $\lim_{x \rightarrow 0^+} [(\cot 2x)(\tan^{-1} 3x)]$

3. Find the interval(s) where the function  $f(x) = e^x - x^2$  is concave-down

4. Find the area (in units<sup>2</sup>) of the largest rectangle that could be inscribed in a semi-circle of radius 1