King Fahd University of Petroleum and Minerals
Department of Mathematics and Statistics
Math 101 (131) - Quiz 1

Name: ID: Serial No.:

1. Evaluate the limit or show that it does not exists

$$\lim_{x\to-\infty}\left(\sqrt{x^2-3x}-\sqrt{x^2+4x}\right)$$

2. For what values of a and b is

$$f(x)=\begin{cases} x+2a & x<0 \\ ax^2+b & 0\le x\le 1 \\ \dfrac{x-b}{bx+1} & x>1 \end{cases}$$

3. Use the intermediate value theorem to prove that the equation $e^{-x^2} = x$ has a solution.

4. Use limits to find all asymptotes of the curve $y = \dfrac{4 - x^2}{2 - x - x^2}$