King Fahd University of Petroleum and Minerals
Department of Mathematics and Statistics
Math 101 - Quiz 2

Name:
Student ID #:

Question 1. Find the maximum value of $\delta > 0$ so that if $\left|x + \frac{5}{2}\right| < \delta$, then $|(2x+1)+4| < 0.4$.

Question 2. Find the value of a so that $f = \begin{cases} \dfrac{|x^2+3x|}{x+3}, & x > -3 \\ a, & x \leq -3 \end{cases}$ is continuous at $x = -3$.

QUESTION 3 IS ON THE BACK OF THE PAGE

Question 3. Find the limits below.

(1) $\lim_{x \mapsto \infty} \dfrac{(1 + 10x - 27x^2)^{1/3}}{(x^4 + 16)^{1/6}}$

(2) $\lim_{x \mapsto -\infty} \dfrac{e^{4x} - 3e^x}{4e^{3x} + e^x}$

(3) $\lim_{x \mapsto 3} \arctan\left(\dfrac{6x - 18}{x^2 - 9}\right)$