

King Fahd University of Petroleum and Minerals
Department of Mathematics and Statistics
Math 102 - Quiz 5

Name:

Student ID #:

Question 1. Find the limit of the following sequences. Give reasons for your answer.

(1) $a_n = \frac{\sqrt{4n^2 - 3}}{n + 2}$

(2) $a_n = \left(1 - \frac{3}{n}\right)^{2n}$

(3) $a_n = (-1)^n \frac{n^2}{n^3 + 1}$

QUESTION 2 IS ON THE BACK OF THE PAGE.

Question 2. Determine whether the series $\sum_{n=1}^{\infty} (-1)^{n+1} \frac{5^n}{3^{2n}}$ converges or diverges. In case it converges, find its sum.