

QUIZ #9

Math 142

Name: _____

SHOW ALL WORK. Any solution that is not accompanied by the appropriate work necessary for solving the problem will receive no credit. Do not use your calculator to evaluate any limits, derivatives, or integrals. **There are problems on the front and back of this page.**

1. Determine if the following series converge or diverge.

(a) $\sum_{n=1}^{\infty} ne^{-n^2}$

(b) $\sum_{n=1}^{\infty} \frac{3n^2}{n^3 - 5}$

2. The series $\sum_{n=1}^{\infty} \frac{3^n - 2}{7^n + 5}$ converges by the Comparison Test (you don't need to show this). What is the largest possible error in using $\sum_{n=1}^{100} \frac{3^n - 2}{7^n + 5}$ to approximate the series?