

Name: _____ Section: _____

Answer all questions and show your work. Unsupported answers may receive *no credit*. You may not use a calculator on this quiz. Allow 15 minutes for the quiz.

1. (a) (2 points) State the Limit Comparison Test for series.
- (b) (3 points) Use the Limit Comparison Test to compare the series

$$\sum_{n=1}^{\infty} a_n = \sum_{n=1}^{\infty} \frac{8^n}{5 + 7^n}$$

with an appropriate geometric series and determine whether $\sum_{n=1}^{\infty} a_n$ converges or diverges.

2. (5 points) Consider the series $\sum_{n=1}^{\infty} \frac{1}{n^4}$. How many terms of the series would you need to add to find its sum to within $\frac{1}{3000}$?