

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 convergence of series.
- (b) (3 points) Use the limit comparison test to compare with a  $p$ -series and determine if the series

$$\sum_{n=1}^{\infty} \frac{n^2}{3n^4 + 10}$$

converges or diverges.

2. (5 points) Use the integral test to find a value of  $N$  so that

$$\sum_{k=N+1}^{\infty} \frac{1}{k^3} \leq \frac{1}{50}.$$