

## QUIZ 5

(Math 200-Section B)

1. Use partial fractions to find the sum of the series  $\sum_{n=1}^{\infty} \frac{3}{(3n-2)(3n+1)}$ . (4 pts)

2. For the geometric series  $\sum_{n=0}^{\infty} e^{-3n}$ , find the following: (3 pts)

(a) the first three terms      (b) The ratio  $r$       (c) The sum of the series.

3. Use the Integral Test to determine whether the series  $\sum_{n=1}^{\infty} \frac{5n}{\frac{5}{2}n^2 - 1}$  converges or diverges. (4 pts)

4. Use the Comparison Test to determine whether the series  $\sum_{n=1}^{\infty} \frac{1 + \cos n}{n^2}$  converges or diverges. (3 pts)

5. Use the Ratio Test to determine whether the series  $\sum_{n=1}^{\infty} \frac{e^n}{n!}$  converges or diverges. (3 pts)

6. Use the  $n$ -th Root Test to determine whether the series  $\sum_{n=1}^{\infty} \frac{(\ln n)^n}{n^n}$  converges or diverges. (3 pts)