MATH 152 **QUIZ 8** NAME _____

Mrs. Bonny Tighe 25 points

12.7, 12.8 Section _____ Wed 11/9/05

Test each of the series for convergence or divergence:

State and use the Comparison Test.

a) $\sum_{n=2}^{\infty} \frac{\cos \pi n}{n^3 + n}$

State and use the Alternating Series Test

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

State and use the Integral Test

c) $\sum_{n=1}^{\infty} \frac{\ln n}{n^2}$

State and use the Ratio Test

d) $\sum_{n=1}^{\infty} \frac{10^n}{n!}$

2. Find the radius of convergence and the interval of convergence for each of the given power series.

a) $\sum_{n=0}^{\infty} \frac{(-1)^n (x-1)^n}{n+1}$

b) $\sum_{n=0}^{\infty} \frac{(\frac{x}{2})^n}{n!}$

c) $\sum_{n=0}^{\infty} \sqrt{n}(3x-1)^n$

d) $\sum_{n=0}^{\infty} \frac{2^n (x-3)^n}{3 \cdot 5 \cdot 7 \cdot 9 \cdots (2n+1)}$