

MAC 2312
Quiz 10
November 26, 2008

1) Determine whether the following series converge or diverge. You may use ANY test you have learned, not necessarily the ones from this week's homework.

$$\sum_{n=1}^{\infty} \frac{n^2 + \ln(n)}{\sqrt{n^5 + 3}}$$

$$\sum_{n=1}^{\infty} \frac{3^n}{n^2(n+2)!}$$

$$\sum_{n=1}^{\infty} \frac{(-1)^n \ln(n)}{n+4}$$

$$\sum_{n=1}^{\infty} \frac{n^3 + 3n + 4}{n^3 - 3n + 6}$$

2) Determine the sum of the first four terms of the following series, and then approximate the error between the sum of the first four terms and the sum of the infinite number of terms. Finally, give an interval that contains the sum of the series.

$$\sum_{n=1}^{\infty} \frac{(-1)^{n+1} 2^n}{(n!)^2}$$