MATH 230
11.7

Directions: Show all work on a separate sheet of paper for full credit.

1. Test the series for convergence or divergence. You may use any test from 11.2-11.6. If you find convergence using the alternating series test, determine if it's absolutely or conditionally convergent.

   (a) $\displaystyle\sum_{n=1}^{\infty} \frac{n-1}{n^3+1}$

   (b) $\displaystyle\sum_{n=2}^{\infty} \frac{1}{n\sqrt{\ln n}}$

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

   (d) $\displaystyle\sum_{n=1} (-1)^{n-1} \frac{n^4}{4^n}$

   (e) $\displaystyle\sum_{n=1}^{\infty} \left(\frac{1}{n^3} + \frac{1}{3^n}\right)$

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

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

   (h) $\displaystyle\sum_{n=1}^{\infty} \sin(1/n)$

   (i) $\displaystyle\sum_{n=1}^{\infty} \frac{n^2+1}{5^n}$

   (j) $\displaystyle\sum_{n=1}^{\infty} \frac{e^{1/n}}{n^2}$

   (k) $\displaystyle\sum_{n=1}^{\infty} \left(\frac{n}{n+1}\right)^{n^2}$

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