MATH 230
11.3

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

1. Use the Integral Test to determine whether the series is convergent or divergent.
   a) $\sum_{n=1}^{\infty} n^{-0.3}$
   b) $\sum_{n=1}^{\infty} n^2 e^{-n^3}$

2. Determine whether the series is convergent or divergent.

   (a) $\sum_{n=1}^{\infty} \frac{1}{n^{\sqrt{2}}}$

   (b) $\sum_{n=1}^{\infty} n^{-0.9999}$

   (c) $\frac{1}{5} + \frac{1}{7} + \frac{1}{9} + \frac{1}{11} + \frac{1}{13} + \ldots$

   (d) $1 + \frac{1}{2\sqrt{2}} + \frac{1}{3\sqrt{3}} + \frac{1}{4\sqrt{4}} + \frac{1}{5\sqrt{5}} + \ldots$

   (e) $\sum_{n=1}^{\infty} \frac{\sqrt{n}+4}{n^2}$

   (f) $\sum_{n=1}^{\infty} \frac{1}{n\ln(n)}$

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

   (h) $\sum_{n=1}^{\infty} \frac{1}{n^2+4}$

3. Estimate $\sum_{n=1}^{\infty} \frac{1}{(2n+1)^6}$ correct to 5 decimal places.