Worksheet 11.3

Full Name: _____ Score: _____

1. Determine if each of the following ***p*-series** is convergent or divergent.

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

(b) $\sum_{n=1}^{\infty} \frac{1}{\sqrt[5]{n^3}}$

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

(d) $\sum_{n=1}^{\infty} \frac{1}{\sqrt[3]{n^4}}$

(e) $1 + \frac{1}{4} + \frac{1}{9} + \frac{1}{16} + \frac{1}{25} + \dots$

(f) $1 + \frac{1}{\sqrt{2}} + \frac{1}{\sqrt{3}} + \frac{1}{\sqrt{4}} + \frac{1}{\sqrt{5}} + \dots$

2. Use the **integral test** to determine whether the series is convergent or divergent.

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

(b) $\displaystyle\sum_{n=1}^{\infty} \frac{\sqrt[3]{n}+2}{n^2}$

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

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

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

(f) $\displaystyle\sum_{n=1}^{\infty} n^2\, e^{-n^3}$

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