# Math 112
# Chapter 11: Series Strategy

Test each of the series for convergence or divergence. Clearly state which test is used, why it applies.

1. $\displaystyle\sum_{n=3}^{\infty} \frac{1}{n\sqrt{\ln n}}$

2. $\displaystyle\sum_{n=1}^{\infty} \frac{2^{-n}}{n^2}$

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

4. $\displaystyle\sum_{n=1}^{\infty} \tan\left(\frac{1}{n}\right)$

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

6. $\sum_{n=1}^{\infty}(-1)^{n-1}\frac{\ln n}{\sqrt{n}}$

7. $\sum_{n=1}^{\infty}\frac{1}{n^{1+1/n}}$

8. $\sum_{n=1}^{\infty}\frac{\sqrt[3]{n}-1}{n(\sqrt{n}+1)}$

9. $\sum_{n=1}^{\infty}\frac{1}{2+\sin n}$

10. $\sum_{n=1}^{\infty}\frac{\sqrt[3]{n}-1}{n(\sqrt[n]{+}1)}$