# Homework2

1. Use the Integral Test to determine the convergence or divergence of the series.

$$\frac{\ln 2}{\sqrt{2}}+\frac{\ln 3}{\sqrt{3}}+\frac{\ln 4}{\sqrt{4}}+\frac{\ln 5}{\sqrt{5}}+\frac{\ln 6}{\sqrt{6}}+\cdots$$

2. Use the Limit Comparison test to determine the convergence or divergence of the series.

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

3. Determine the convergence or divergence of the series.

   (a)

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

   (b)

$$\sum_{n=0}^{\infty}\frac{(-1)^{n}}{(2n+1)!}$$