

Convergence Test Practice

1. $\sum_{n=1}^{\infty} \frac{n-1}{n^2+n}$ D; LCT, Harmonic

2. $\sum_{n=1}^{\infty} \frac{(-3)^{n+1}}{2^{3n}}$ C; Geometric

3. $\sum_{n=2}^{\infty} \frac{1}{n\sqrt{\ln n}}$ D; Integral

4. $\sum_{n=1}^{\infty} \frac{5^n}{4^n+3}$ D; LCT, Geometric

5. $\sum_{n=1}^{\infty} \frac{3^n n^2}{n!}$ C; Ratio

6. $\sum_{n=1}^{\infty} n e^{-n^2}$ C; Integral

7. $\sum_{n=1}^{\infty} \frac{\sqrt{n^2-1}}{n^3-2n^2+5}$ C; LCT, p-series

8. $\sum_{n=1}^{\infty} (-1)^n 2^{1/n}$ D; Test for Div.

9. $\sum_{n=1}^{\infty} \left(\frac{1}{\sqrt{n}} - \frac{1}{\sqrt{n+2}} \right)$ C; Telescoping