

1. What is a sequence? What does it mean for a sequence to converge? Give an example of a convergent sequence and of a divergent sequence.

2. What is a series? What does it mean for a series to converge? Give an example of a convergent series and of a divergent series.

3. Use the integral test to determine the convergence or divergence of the series

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

4. Use the comparison test to determine the convergence or divergence of the series

$$\sum_{n=0}^{\infty} \frac{3^n - n^3}{5^n + n^5}.$$