

1552 Quiz 5: Sample Questions

May 11, 2023

1 Question 1: Comparison Test

Determine whether the following series converge or diverge using either the Basic Comparison Test or the Limit Comparison Test.

1. $\sum_{k=1}^{\infty} \frac{1}{1+2^k}$

2. $\sum_{k=1}^{\infty} \frac{1}{1+3^k}$

3. $\sum_{k=2}^{\infty} \frac{1}{\sqrt{k}-1}$

4. $\sum_{k=1}^{\infty} \frac{k^2}{k^4+5}$

2 Question 2: Ratio Test

Determine whether the following series converge or diverge using the Ratio Test.

1.
$$\sum_{k=2}^{\infty} \frac{k^4}{(2k-1)!}$$

2.
$$\sum_{k=1}^{\infty} \frac{4^k}{(2k)!}$$

3.
$$\sum_{k=2}^{\infty} \frac{k^2}{(2k-1)!}$$

4.
$$\sum_{k=2}^{\infty} \frac{k^3}{(2k-1)!}$$