Daily Quiz

- Go to Socrative.com and complete the quiz.
- Room Name: HONG5824
- Use your full name.

8.4 Modes of Convergence

Absolutely Convergent

Definition. A series $\sum_{n=1}^{\infty} a_n$ is called **absolutely convergent** if the series of absolute values $\sum_{n=1}^{\infty} |a_n|$ is convergent.

Conditionally Convergent

Definition. A series $\sum_{n=1}^{\infty} a_n$ is called **conditionally convergent** if it is not absolutely convergent but still converges.

Divergent

Definition. A series $\sum_{n=1}^{\infty} a_n$ is divergent if the sequence of its partial sums $s_m = \sum_{n=1}^{m} a_n$ has no limit as n goes to infinity.

8.4 Absolute Convergence

EXAMPLE 7 Determine whether the series

$$\sum_{n=1}^{\infty} \frac{\cos n}{n^2} = \frac{\cos 1}{1^2} + \frac{\cos 2}{2^2} + \frac{\cos 3}{3^2} + \cdots$$

is convergent or divergent.

Determine whether the series converges absolutely, converges conditionally, or diverges.

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