# 27 Lecture - MTH101

## **Important Subjective**

#### What is sigma notation?

**Answer:** Sigma notation is a mathematical notation that allows us to write long sums of numbers in a more compact and convenient way.

#### What is the symbol used to represent a sum in sigma notation?

**Answer:** The symbol used to represent a sum in sigma notation is the Greek letter sigma (?).

#### What is the index variable in sigma notation?

**Answer:** The index variable in sigma notation is the variable that runs from the lower limit of the sum to the upper limit of the sum.

## How is an arithmetic sequence represented in sigma notation?

**Answer:** An arithmetic sequence is represented in sigma notation as ?i=1n (a + (i-1)d), where "a" is the first term, "d" is a common difference, and "n" is the number of terms.

#### How is a geometric sequence represented in sigma notation?

**Answer:** A geometric sequence is represented in sigma notation as ?i=0n ar^i, where "a" is the first term, "r" is the common ratio, and "n" is the number of times.

## What is the purpose of using sigma notation?

**Answer:** The purpose of using sigma notation is to represent long sums of numbers in a more compact and convenient way.

### Can sigma notation be used to represent infinite series?

**Answer:** Yes, sigma notation can be used to represent infinite series.

## How can we determine whether an infinite series converges or diverges?

**Answer:** We can determine whether an infinite series converges or diverges using techniques such as the ratio and integral tests.

## Is sigma notation used only in calculus and analytical geometry?

**Answer:** No, sigma notation is used in many different branches of mathematics, such as discrete mathematics and combinatorics.

## What is the importance of mastering sigma notation?

**Answer:** Mastering sigma notation is essential because it allows us to make our mathematical expressions more concise and easier to work with, and gain a deeper understanding of the properties of series and sequences.