

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 (Σ).

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 $\sum_{i=1}^n (a + (i-1)d)$, 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 $\sum_{i=0}^n ar^i$, 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.