Limits and Integrals

Key Concepts:

- Limits
- Integrals
- Calculus
- Infinite series

Important Definitions:

■ Limit: The value that a function approaches as the input gets arbitrarily close to a certain point

■ Integral: The area under a curve or the accumulation of a quantity over a defined interval

Examples:

■ Problem 2: Evaluate the limit L = lim (n! / n^n) as n approaches infinity

■ Problem 3: Evaluate the integral I = ∫[0,1] ln(x) ln(1-x) dx

Evaluating Limits

- Using L'Hopital's rule
- Using the squeeze theorem
- Using the definition of a limit

Evaluating Integrals

- Using substitution
- Using integration by parts
- Using the fundamental theorem of calculus

Summary:

This topic covers the concepts of limits and integrals, including their definitions, properties, and applications.