Recurrence Relations

Key Concepts:

- Recurrence relations
- Sequences
- Series

Important Definitions:

- Recurrence relation: A mathematical equation that defines a sequence of numbers recursively
- Sequence: A list of numbers in a specific order

Examples:

- Problem 4: Solve the recurrence relation $\sum[k=1 \text{ to } n]\ a(k) = n / (n+1)$
- Problem 5: Find the value of the sequence $a\_n = 1 / (4n+1) + 1 / (4n+3) - 1 / (2n+2)$

Solving Recurrence Relations

- Using iteration
- Using characteristic equations
- Using generating functions

Applications of Recurrence Relations

- Modeling population growth
- Modeling financial systems
- Modeling physical systems

Summary:

This topic introduces the concept of recurrence relations and their applications in solving sequences and series.