

# Maximizing a Expression with Constraints

## Key Concepts:

- Arithmetic-geometric mean inequality
- Maximization
- Constraints
- Inequalities
- Optimization

## Important Definitions:

- Arithmetic-geometric mean inequality: The inequality stating that the arithmetic mean of a set of non-negative numbers is greater than or equal to the geometric mean.
- Maximization: The process of finding the maximum value of an expression.

## Examples:

- The inequality  $2\sqrt{b/a} \leq b/c + c/a$
- The constraint  $a/b + b/c + c/a \leq 5$

## Introduction to Inequalities

- Understanding the concept of inequalities
- Applying inequalities to maximize expressions

## Applying the Arithmetic-Geometric Mean Inequality

- Understanding the arithmetic-geometric mean inequality
- Using the inequality to find the maximum value of an expression

## Summary:

This problem involves maximizing the expression  $a/b$  given the constraint  $a/b + b/c + c/a \leq 5$ , using the arithmetic-geometric mean inequality.