# Algebra Resources

**Study Plan Overview**

- **Duration:** 4 Weeks
- **Daily Commitment:** 3-4 hours
- **Materials:** YouTube videos, articles, books

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**Week 1: Unit 1 - Complex Numbers and Theory of Equations**

- **Polar Representation & Complex Numbers**
  - Polar Representation of Complex Numbers in Hindi
- **De Moivre's Theorem**
  - De Moivre's Theorem Explained in Hindi
- **Theory of Equations**
  - Relation Between Roots and Coefficients
- Complex Numbers - Basics in Hindi
- Theory of Equations - Simple Formulas in Hindi
- **"Higher Algebra" by Hall and Knight** (Focus on Theory of Equations)

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**Week 2: Unit 2 - Relations, Functions, and Induction**

- **Equivalence Relations**
  - Equivalence Relations in Hindi
- **Functions and Invertibility**
  - Functions and Their Properties
- **Mathematical Induction**
  - Fundamental Theorem of Arithmetic
- Understanding Functions and Relations
- Mathematical Induction Basics
- **"Discrete Mathematics" by Rosen** (Focus on Functions and Induction)

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**Week 3: Unit 3 - Systems of Linear Equations**

- **Linear Equations**
  - Systems of Linear Equations
- **Row Reduction and Echelon Forms**
  - Row Reduction Methods
- Introduction to Linear Systems
- Linear Independence Explained
- **"Linear Algebra" by Lay** (Focus on Linear Systems)

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**Week 4: Unit 4 - Linear Transformations and Matrices**

- **Linear Transformations**
  - Introduction to Linear Transformations

- **Matrices and Eigen Values**
  - Matrices and Their Properties

- Understanding Linear Transformations
- Eigenvalues and Eigenvectors in Hindi
- **"Linear Algebra and Its Applications" by Gilbert Strang** (Focus on Matrices and Linear Transformations)

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**Additional Resources**

- **Websites**
  - Khan Academy (Hindi)
  - GeeksforGeeks (Hindi Section)

- **Practice**
  - Solve example problems and past papers related to each unit after reviewing videos and articles.

**Final Tips**

- **Daily Review:** Spend 30 minutes revising previous material each day.
- **Practice Problems:** Allocate time on weekends for problem-solving.
- **Group Study:** Consider discussing topics with peers for deeper understanding.

By following this plan diligently, you should be well-prepared for your paper. Good luck!