# 1-Month Study Plan for Algebra

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**Topics:**

- Polar representation of complex numbers
- nth roots of unity
- De Moivre’s theorem
- Theory of equations: Relationship between roots and coefficients

**Resources:**

- **YouTube Videos:**
  - Complex Numbers in Hindi
  - De Moivre's Theorem Explained
- **Articles:**
  - Complex Numbers Basics
  - Understanding Polynomial Equations
- **Books:**
  - "Higher Algebra" by Hall and Knight (check Hindi translation)
  - "Algebra Made Easy" by W. W. Sawyer (if available in Hindi)

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**Topics:**

- Inequalities: AM, GM, HM
- Equivalence relations and Partial Order relations

**Resources:**

- **YouTube Videos:**
  - Inequalities in Hindi
  - Relations and Functions
- **Articles:**
  - Understanding Inequalities
  - Relations and Their Types
- **Books:**
  - "Discrete Mathematics" by Kenneth H. Rosen (check for Hindi resources)

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**Topics:**

- Systems of linear equations
- Row reduction and echelon forms
- Vector equations and linear independence

**Resources:**

- **YouTube Videos:**
  - Linear Equations in Hindi
  - Matrix Theory Basics
- **Articles:**
  - Linear Equations Overview
  - Matrix and Its Applications
- **Books:**
  - "Introduction to Linear Algebra" by Gilbert Strang (check Hindi translations)

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**Topics:**

- Linear transformations and their matrix representations
- Eigenvalues and eigenvectors
- Cayley-Hamilton Theorem

**Resources:**

- **YouTube Videos:**
  - Linear Transformations in Hindi
  - Eigenvalues and Eigenvectors
- **Articles:**
  - Understanding Eigenvalues & Eigenvectors
  - Linear Transformations Explained
- **Books:**
  - "Linear Algebra and Its Applications" by David C. Lay (available in Hindi edition)