Course Overview- Math 12

- **Transcendental and Inverse Functions, and L'Hôpital:**
  - Exponentials and Logarithms (Section 7.2-7.4) (Review)
  - Inverse Functions (Section 7.1) (Review)
  - Inverse Trigonometric Functions (Section 7.6)
  - Hyperbolic and Inverse Hyperbolic Functions (Section 7.7)
  - L'Hôpital's Rule and Indeterminate Forms (Section 7.8)
- **Integration Methods:**
  - Integration by Substitution (Section 5.5) (Review)
  - Integration by Parts (Section 8.1)
  - Trigonometric Integrals (Section 8.2)
  - Trigonometric Substitution (Section 8.3)
  - Completing the Square (end of Section 8.3)
  - Partial Fractions (Section 8.4)
  - Integration Strategies (Section 8.5)
  - Improper Integrals (Section 8.8)
- **Sequences and Series:**
  - Sequences (Section 12.1)
  - Introduction to Series (Section 12.2)
  - Integral Test and p-Test (Section 12.3)
  - Comparison and Limit Comparison Test (Section 12.4)
  - Alternating Series (Section 12.5)
  - Absolute and Conditional Convergence; Ratio and Root Tests (Section 12.6)
  - Series Testing Strategy (Section 12.7)
  - Intoduction to Power Series (Section 12.8)
  - Representing Functions as Power Series (Section 12.9)
  - Taylor and MacLaurin Series (section 12.10)
- **More Integration:**
  - Volumes of Revolution; Disks and Washer Methods (Section 6.2) (Review)
  - Volumes by Cylindrical Shells (Section 6.3)
- **Parametric Equations:**
  - Introduction to Parametric Equations (Section 11.1)
  - Calculus with Parametric Equations (Section 11.2)

- **Polar Coordinates:**
  - Introduction to Polar Coordinates (Section 11.3)
  - Area with Polar Coordinates(Section 11.4)
- **Differential Equations:**
  - Separable Equations (Section 10.3)
  - First Order Linear Equations (Section 10.5)

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Suggested (Traditional) Format for Math 12 Final Exam

- Limits
- Derivatives
- Integrals
- Improper Integrals
- Infinite Series, A.C., C.C., or Diverges, Sums
- Power Series: Interval/Radius of Convergence, Sums
- Taylor Series Related Questions, Sums
- Volumes of Revolution
- Parametric Equations
- Polar Coordinates
- Differential Equations