

BC Final Exam Topics 2012-2016 (# of questions out of 320 in this topic)

- I. Limits, Continuity, and Differentiability (27)
 - Basic Limits
 - L'Hopital's Rule
 - Limit Definitions of the Derivative
 - Formal definition of Continuity
 - Formal definition of Differentiability
 - Questions with Graphs

- II. Derivatives (33)
 - Power, Product, Quotient, Transcendental, and Chain Rules
 - Local Linearity and Euler's Method
 - Implicit Derivatives
 - Questions with Tables

- III. Applications of Derivatives (47)
 - Extremes and Optimization
 - Points of Inflection
 - Intervals of Increasing and Decreasing
 - Intervals of concavity
 - Related Rates
 - Rectilinear motion
 - Graphical Analysis
 - Interpreting a graph
 - Analysis of Tables

- IV. Anti-Derivatives (35)
 - Basic Rules
 - U-Subs
 - Back substitution
 - Separation of Variables
 - Slope Fields
 - Rectilinear Motion

- V. Definite Integrals (45)
- Accumulation of Rates
 - Interpretation of phrases
 - Average Value, Average Rate of Change, Mean Value, and Intermediate Value Theorems
 - Area vs. Definite integrals
 - Graphical Analysis
 - Riemann Sums and Trapezoidal sums
- VI. Applications of Integrals (20)
- Area
 - Volume
 - Arc Length
 - Distance vs Displacement
- VII. Advanced Integration (23)
- Integration by Parts
 - Integrating Rational Functions
 - Integration by Partial Fractions
 - Logistic Growth
- VIII. Parametric Coordinates (18)
- Motion
 - Slope
 - Arc Length
- IX. Polar Coordinates (13)
- Area
 - Slope
 - Arc Length
- X. Numerical Series (35)
- Convergence and Divergence of sequences
 - Convergence and Divergence of Series
 - Conditional Convergence
 - Geometric and p-Series
 - Sum of a Series

XI. Power Series (18)

- Taylor Series
- Creating a new series from an known series
- Radius and interval of Convergence