Outline of A.P. Calculus Semester 1 Exam

Day 1:

Part I ***With*** a Calculator
Multiple Choice
Free Response

Day 2:

Part II ***Without*** a Calculator
Multiple Choice
Free Response

To do well on this exam, you should do the following:

1. Study your notes – study methods used in proofs and problems. Learn definitions in your notes.
2. Rework problems that I assigned for homework.
3. Rework problems on tests and quizzes and Mini exams.
4. Work all the problems on the review sheets.
5. Study the list of Derivatives.

Outline of Exam by Topics:

I. Chapter 1 - Functions
A. Properties of functions --Definition, Domain, and Range
B. Graphing Functions
C. Parametric Equations
D. Greatest Integer Function
E. Inverse Trig Functions
F. Logarithmic and Exponential Functions

II. Chapter 2 - Limits and Continuity
A. Limits - Intuitive (and infinite geometric series)
B. Limits - Definition
C. Limits - Computations
D. Continuity

III. Chapter 3 - Differentiation
A. Definiton of Derivative, Graph of derivative
B. Tangent and Normal Lines
C. Derivative Formulas
(Chain Rule, Trig., Tables, Product, Power, Sum, Quotient)
D. Derivatives of trig functions
E. Differentials
F. Velocity, Acceleration
G. Related Rates

IV. Chapter 4 - Logarithmic and Exponential Functions
A. Inverse Functions
D. Implicit Differentiation
E. Derivatives of logarithmic and exponential functions
F. Derivatives of Inverse Trigonometric Functions
G. L'Hopital's Rule

V. Chapter 5 – Curve Sketching
A. Increasing, Decreasing, Concavity
B. Relative Extrema – Maxima, Minima
C. Absolute Extrema
D. Applied Maxima Minima Problems

VI. Appendix A - Trignometry
A. Trig Functions
B. Trig Identities
C. Trig Equations

VII. Appendix B -Solving Polynomial Equations
A. Remainder Theorem

VIII. Appendix D - Real Numbers, Intervals, and Inequalities
A. Express repeating decimals as ratios of integers
B. Interval Notation
C. Solving inequalities

IX. Appendix E - Absolute Value

X. Appendix F - Coordinate Planes and Lines
A. Slope of a line and Angle of inclination
B. Equations of lines

XI. Appendix G - Distance and Circles
A. Distance
B. Circles