

MTH 1321 - Calculus I

Text: *Single Variable Calculus: Early Transcendentals*, 3rd edition,
Jon Rogawski and Colin Adams

Chapter 2 LIMITS

- 2.1 Limits, Rates of Change, and Tangent Lines
- 2.2 Limits: A Numerical and Graphical Approach
- 2.3 Basic Limit Laws
- 2.4 Limits and Continuity
- 2.5 Evaluating Limits Algebraically
- 2.6 Trigonometric Limits
- 2.7 Limits at Infinity
- 2.8 Intermediate Value Theorem

Chapter 3 DIFFERENTIATION

- 3.1 Definition of the Derivative
- 3.2 The Derivative as a Function
- 3.3 Product and Quotient Rules
- 3.4 Rates of Change
- 3.5 Higher Derivatives
- 3.6 Derivatives of Trigonometric Functions
- 3.7 The Chain Rule
- 3.8 Implicit Differentiation
- 3.9 Derivatives of Logarithmic Functions
- 3.10 Related Rates

Chapter 4 APPLICATIONS OF THE DERIVATIVE

- 4.1 Linear Approximation and Applications
- 4.2 Extreme Values
- 4.3 The Mean Value Theorem and Monotonicity
- 4.4 The Shape of a Graph
- 4.6 Graph Sketching and Asymptotes
- 4.7 Applied Optimization

Chapter 5 THE INTEGRAL

- 5.1 Approximating and Computing Area
- 5.2 The Definite Integral
- 5.3 The Indefinite Integral
- 5.4 The Fundamental Theorem of Calculus, Part I
- 5.5 The Fundamental Theorem of Calculus, Part II
- 5.6 Net or Total Change as the Integral of a Rate
- 5.7 Substitution Method
- 5.8 Further Transcendental Functions