

## **Chapter 4: The Integral**

Upon successful completion of Chapter 4, the student should be able to:

Evaluate a sum given in sigma notation

Set up an area as a Riemann sum

Define the definite integral of a function

Interpret the properties of definite integrals as properties of areas

Use the various interpretations of the definite integral to solve problems of area, distance and accumulation

State and describe the meaning of the Fundamental Theorem of Calculus

Use antiderivatives to exactly evaluate definite integrals

Assign the correct units to the result of a definite integral

Determine antiderivatives using the method of Change of Variable (U-Substitution)

Use table of antiderivatives to find antiderivative of more complicated functions

Approximate the values of definite integrals using rectangles, trapezoids and parabolas