Preparing for Class 4

Reading: Review *H-H* pp. 148-150. Begin reading Section 3.2.

Problems: *H-H* pp. #4, 5, 8, 11

Wednesday, January 31

Class 4:

Summation Notation and More Examples of Riemann Sums

You have already been introduced to Riemann sums. The key features of these sums are that a function is evaluated at a sequence of points, each evaluation is multiplied by the width of a certain interval containing that point, and all these products are summed up. We will look more closely at how Riemann sums are constructed and will introduce a compact notation for writing them.

Take-Home Quiz on Riemann Sums Handed Out

Lab 1: Riemann Sums

Preparing for Class 5

Reading: *H-H* Section 3.2.

Problems: *H-H* pp. 158-159 #1, 12, 16, 17

Friday, February 2

Class 5:

Limits of Riemann Sums: The Definite Integral

In using Riemann sums to approximate the area under the graph of a function, you have already realized that the approximation improves if more and more points and smaller and smaller subintervals are used (i.e. if the *partition* is made more and more fine). IF Riemann sums for a function f on an interval from a to b all approach the same definite value as the partitions are refined, then this value is called the **definite integral of** f **from** a **to** b, written $\int_a^b f(t)dt$.

Take-Home Quiz on Riemann Sums Due at the Beginning of Class 5

Preparing for Class 6

Reading: Review *H-H*, Section 3.2. Read *H-H*, pp. 181-182
and *CiC Handouts* , Section 6.1 (handout).

Problems: *H-H*, pp. 158-159 # 2, 11, 21, 22, 23, 24, 27

Monday, February 5

Class 6:

Introduction to Accumulation Functions

You are now familiar with the the definite integral as a limit of Riemann sums, and with its interpretation as a (signed) area. In many cases, it makes sense to think about not just one definite integral but rather a set of them as, for instance, the lower endpoint remains fixed while the upper endpoint varies. This defines a new function: given a value for the upper endpoint, evaluate the corresponding definite integral to obtain the corresponding value of this new function. A function constructed in this way is called an **accumulation function**.

Required Week 2 Homework Due: Hand in homework preparing for Classes 4, 5, 6.