

# Calculus 1, Chapter 6 Study Guide

Prepared by Dr. Robert Gardner

The following is a *brief* list of topics covered in Chapter 6 of *Thomas' Calculus*. Test questions will be chosen directly from the text. This list is not meant to be comprehensive, but only gives a list of several important topics. I reserve the right to ask you definitions and theorems on the tests. If I do so, then I will choose from the **bold-faced** items below.

**6.1 Volumes by Slicing and Rotation About an Axis.** Volume of a solid, cross section, disks, washers.

**6.2 Volumes by Cylindrical Shells.** Cylindrical shells, axes of rotation other than a coordinate axis.

**6.3 Lengths of Plane Curves.** Smooth curves, arc length.

**6.4 Moments and Centers of Mass.** Moment about the origin, thin straight wire, region in the  $xy$ -plane.