

This exam covers Sections 7.1-7.5, 7.7-7.8 and 6.1-6.3. In particular, you need to be able to:

- Evaluate definite and indefinite integrals
- Estimate the value of definite integrals using numerical integration
- Determine whether improper integrals are convergent or divergent, Comparison Test
- Use integrals to describe the area between two curves and the volume of a solid of revolution

There is also one “fill-in-the-blanks” question which tests your knowledge of basic facts and your understanding of key ideas.

Formulas that will be provided:

$$\begin{array}{llll} \sin^2 x & = & \frac{1}{2}(1 - \cos 2x) & \\ \cos^2 x & = & \frac{1}{2}(1 + \cos 2x) & \\ \sin x \cos x & = & \frac{1}{2} \sin 2x & \end{array} \quad \begin{array}{ll} \int \sec x \, dx & = \ln |\sec x + \tan x| \\ \int \csc x \, dx & = \ln |\csc x - \cot x| \end{array} \quad \begin{array}{ll} \int \tan x \, dx & = \ln |\sec x| \\ \int \cot x \, dx & = \ln |\sin x| \end{array}$$

Recommended exercises for review:

- Ch 7 Review True/False Quiz: 2, 3, 4, 7, 9, 10, 11, 14
- Ch 7 Review Exercises: 3, 6, 7, 17, 41, 68, 70, 71; Also 7.7.1
- Ch 6 Review: Concept Check: 2; Exercises: 1, 12, 13, 15