

## Review with Recommended Study Problems for Test #3

**8.5:** Given any integral, be able to determine which integration technique to use and be able to correctly execute each method to perform both indefinite and definite integrals.

**Problems:** 1-13 odd, 19-25 odd, 29, 35-49 odd, 55-61 odd, 69-75 odd.

**8.7:** Be able to use and compare the midpoint, trapezoid and Simpson's rules. Be able to tell whether a given method will be an over or under estimate based on the shape of the function. Be able to use the error bound formulae to find the necessary  $n$  value to reach a desired accuracy.

**Problems:** 1-21 odd, 29, 31, 33, 37,

**8.8:** Be able to identify improper integrals, tell whether they converge and evaluate them if they do. Be able to use the Comparison Test.

**Problems:** 1-45 odd, 49, 51, 53, 57, 59, 63.

**12.1:** Know what a sequence is and be able to use sequence notation. Know how to tell whether a sequence converges or diverges. Know what the squeeze theorem is and be able to use it. Know the properties of sequence limits on page 714.

**Problems:** 1-45 odd, 55, 57.

**12.2:** Know what an infinite series is. Be able to use sigma notation. Know what it means for a series to be convergent or divergent. Know what a geometric series is, how to tell if it converges, and how to find its limit. Know what the harmonic series is and whether it converges. Know the Divergence Test. Know Theorem 8.

**Problems:** 1-33 odd, 41, 43, 45.

**12.3:** Be able to use the integral test. Be able to recognize  $p$ -series and the harmonic series, and identify whether they converge. Be able to use the integral test remainder theorem to approximate the value of a series.

**Problems:** 1, 2, 3-29 odd, 33, 35, 37, 41.

**I highly recommend completing the concept check and true/false quizzes in the Chapters 8 and 12 reviews. There are also a large number of additional review problems in the review sections. For Chapter 8, do Concept Check 5-8, True/False 5-14, Exercises 1-7, 9, 10, 12-15, 17, 18, 24, 29, 41-52, 61-68, 70, 71, 74. For Chapter 12, do Concept Check 1-4, 7a, True/False 1-3, 11, 14-16, 19, 20, Exercises 1-9, 15, 27, 32, 34, 36.**