

Study guide for quiz 02

Quiz problems include both the lecture contents and homework problems.

1. Section 8.8: Study the comparison Theorems (Theorem 2, Theorem 3) used to decide convergence/divergence of improper integrals. Sample problems: section 8.8, problems 35-64.
2. Section 8.8: Study how to determine convergence/divergence of an improper integral with multiple 'improper' parts, such as the domain contains both $x \rightarrow \pm\infty$, and/or points of discontinuity within the domain.
3. Section 10.1: Review the techniques of finding the limit of a sequence including Sandwich Theorem for sequences, L'Hôpital's Rule, Theorem 2-4 and related examples.
Sample problems: The examples in Theorem 5. Also memorize the results for future applications.
4. Section 10.1: (Parts to skip)
Skip the "Recursive Definition" part.
Skip the "Bounded Monotone Sequences" part. We will come back to it later.
5. Section 10.2:
Study the definition of sum of a series (as a limit).
Study the n -th term test on its application (Section 10.2, problem 31, 33, 41) and its proof.
Review conditions on convergence/divergence of a geometric series (Section 10.2, problem 71, 78).
Review the technique of telescoping sum (Section 10.2, problem 43, 65).