

General Points:

- There is just one fundamental way to prepare for an exam. Understand the material!
- You use one-side of an 8.5 inch by 11 inch piece of paper with notes for the exam.
- You'll answer questions on the exam itself. All you need to bring is a writing utensil and, if desired, a page of notes.
- When you receive the exam, **relax** and proceed deliberately. If you don't know how to do a problem, skip it and return to it later. Accuracy is paramount, speed is useless!
- Check your answers.
- During the exam, **all books, and electronic devices must be out of sight.**

Exam topics: Section 3.11, 4.1–4.6, 4.8

3.11: Hyperbolic functions: definitions and derivatives of $\cosh x$, $\sinh x$, and $\tanh x$.

Problems: 13–18

4.1: Extreme values of functions: absolute maxima and minima and local maxima and minima; critical points; first derivative test.

Problems: 15–62

4.2: Rolle's theorem; Mean value theorem; Corollary 1 and 2 (p. 248–249).

Problems: 15–19, 27–44, 47, 50, 66, 72

4.3: Using the first derivative to determine which intervals the function is increasing and decreasing (Corollary 3, p. 254); first derivative test for local extrema.

Problems: 1–46, 51, 53

4.4: Concave up and down, second derivative test for concavity; inflection points; second derivative test for local extrema; sketching curves using the first and second derivative tests.

Problems: 1–42, 69, 75, 76, 83, 84

4.5: Optimization: maximizing and minimizing quantities.

Problems: 3, 5, 7, 9, 11, 12, 14, 15, 17, 19, 20, 23, 24, 31, 32, 39, 41, 42, 47, 49, 50

4.6: Indeterminate forms; L'Hospital's rule.

Problems: 1–56, 63

4.8: Antiderivatives; indefinite integrals, initial value problems.

Problems: 1–106, 117, 119–121