

MATH 141, Fall 2014
EXAM 3 TOPICS

Exam 3 will take place during class on Tuesday, December 9.

The exam will be one class period long. Graphing calculators (TI- \leq 86) are allowed and are somewhat useful. Be aware that I will come around and delete their memory before the exam. You do not need to bring your QC ID to this exam.

The exam covers all material covered since the second exam, including Section 2.8 and Sections 3.1–3.5 of Stewart's *Essential Calculus*.

In addition to computational questions, there will be questions that ask you to understand concepts from the course, possibly including, and not limited to:

- Estimating the maximum error, relative error, and percentage error for a calculation involving linearization and/or differentials. (See the end of Section 2.8 and Exercise 2.8.21.)
- The Extreme Value Theorem (p. 143, 1st Ed, p. 146, 2nd Ed)
- Fermat's Theorem (p. 144, 1st Ed, p. 147, 2nd Ed)
- Rolle's Theorem (p. 149, 1st Ed, p. 152, 2nd Ed)
- The Mean Value Theorem (p. 151, 1st Ed, p. 154, 2nd Ed)
- The First and Second Derivative Tests (Section 3.3)
- The First Derivative Test for Absolute Extreme Values (p. 172, 1st Ed, p. 176, 2nd Ed)

You should understand how to use your graphing calculator to:

- Use the commands from the CALC menu, including VALUE, ZERO, maximum, minimum, dy/dx, as explained on the worksheet from class.

To study for the exam:

- I **especially recommend** the Chapter Reviews. Revisit the review in Chapter 2 (pp. 138–141 (1st Ed) or pp. 140–143 (2nd Ed)) and focus on questions in Section 2.8. Then work on the Chapter Review for Chapter 3 (pp. 191–193 (1st Ed) or pp. 195–198 (2nd Ed)), only ignoring any questions related to Newton's Method or Antiderivatives. *Take these questions seriously.*
- Verify that you understand all new definitions completely.
- Review Webwork assignments 7–9. It is possible to return to an assignment and see the correct answers.
- There will be a Question and Answer session during the second half of class on Thursday, December 4. Prepare questions to ask during this Question and Answer session.