

## Final Exam Study Guide

The exam will consist of 25 multiple choice questions. Each question will have 5 answer choices, one of which may be “none of the above”.

You will have 2 hours to complete the exam. You may not use any calculators, any notes, or any of your own paper. You may write on the exam. Additional scratch paper will be provided. You will only need a pencil and an eraser (and a pen for your scratch work, if you'd like). Also, please bring a photo ID.

All of the following the topics (all covered in Math 75B) will be represented on the final exam:

- Implicit differentiation
- Related rates
- Exponential growth and decay
- Inverse trigonometric functions
- L'Hospital's rule
- Extreme values of a function
- Critical values
- The Mean Value Theorem
- Derivatives and the shapes of graphs
- Curve sketching
- Optimization
- Newton's method
- Antiderivatives
- Areas and distances
- The definite integral
- The Fundamental Theorem of Calculus
- The Substitution Rule

While the exam will concentrate on the material covered in Math 75B, most problems will require knowledge of some material covered in Math 75A. You should review the following topics covered in Math 75A:

- Cartesian plane, coordinates, equations of lines and circles
- Functions and their representations
- Special classes of functions and their graphs
- Transformations of graphs
- Angles
- Trigonometric functions, including their values at some important angles and basic identities

- The limit of a function, including limits involving infinity
- Continuity
- Derivatives, including definition, basic formulas, differentiation rules
- Exponential functions
- Inverse functions
- Logarithms

Suggested ways of studying:

- Review previous tests. Redo the tests by yourself first, and then check your solutions.
- Do both review sets (14 and Review) on WeBWorK. Complete solutions to most problems in the set Review will be available the day before the final exam.
- Identify topics that require more studying. Read the examples in both books. Also, review your class notes for more examples.
- Review previous WeBWorK sets and quizzes.
- Do as many odd-numbered problems in Stewart's textbook as possible and check your answers.