

What do I need to study for this final?

Here is a list of topics you should know.

- Meaning of derivative: slope of a tangent line, velocity of an object whose position is given.
- Finding limits using any one of the methods we have learned.
- Reading graphs: knowing how to graphically find the derivative, or how to recognize from a graph which is the function and which its derivative(s).
- Rules for differentiation. You will probably only get to use the product, quotient and chain rules, not so much logarithmic and implicit differentiation.
- Finding equations of tangent lines.
- Interpretation of derivative (e.g. in economics etc.).
- Related rates, basic problems.
- Linear approximations.
- Critical points, inflection points, max/min etc. (sections 4.1 and 4.3).
- Optimization problems (not too difficult).
- Antiderivatives (only briefly, since we won't have time to do this in detail): know that velocity is the antiderivative of acceleration, and distance is the antiderivative of velocity; be able to find antiderivatives of simple functions.

What do I not need to study for this final?

- Chapter 1 (though of course you will use it throughout).
- Definition of derivative.
- Continuity (as a separate concept; it will probably come up within a problem somewhere).
- Graphing a function by hand, like in section 4.3.
- Newton's method.

To study for the final, I recommend reading the book, most of all, and reading the book examples, and then going over homework and handouts from class, the ones that we completed successfully at least. You might want to do a few problems from each of the relevant sections (2.8, 3.1-3.4, 3.9, 3.10, 4.1, 4.3, 4.4, 4.7, 4.9). If you have been doing well in the class and know what is going on, you should have no trouble with the final. The test will not be very computationally intensive.