

Exam 2 Study Topics – Calculus I

The second exam will be held in class on Monday 9 March. Try to arrive a few minutes early so we're ready to begin on time. There are 11 problems, taken from the sections we covered in Chapter 3, excluding 3.8. **Bring a scientific calculator – you will need it for the related rates and differential error analysis questions.** Be prepared for the topics below.

To study, review the materials on my web site, as well as those quiz problems that appear on this list. Look through the examples from lecture that fit into one of the categories below so you can identify the type of problem.

It is not enough to just look at problems and their solutions. **You need to work problems** so you can identify and apply the correct technique.

1. Evaluate derivatives:
 - (a) use the rules: power, product, quotient, chain
 - (b) apply the rules to power functions, trig function, exponential and logarithmic functions, inverse trig functions and the hyperbolic functions $\sinh u$ and $\cosh u$
 - (c) implicit differentiation
 - (d) logarithmic differentiation
2. Related rates
3. Linear approximations
4. Differential error analysis