

- The first test will be on Tuesday, 5 February 2002 at 7:30-9:30pm in Chemistry-Physics 139. Please make sure that you can solve all of the problems in the homework assignments from sections 6.1-6.6, 6.8 and 7.1. These are the assignments on the homework sheets that I have handed out in class. The lettered homework assignments will not be directly examined.

If you feel you need additional practice, select from the longer lists of problems on the syllabus or problems in the book which appear to be similar to the assigned problems.

- Please be prepared to state clearly and correctly the main results that are used in the homework problems. It is particularly important to know the complete statement of L'Hospital's rule. (Mis)-applications of L'Hospital's rule often prevent me from awarding as many points as I would like on exams.

Also, note that there are a number of problems devoted to deriving the derivatives of the inverse trigonometric functions. (See §6.1 #37, 38, §6.6 #27, 29). As I indicated in class, you should not be surprised to see such a problem on the exam.

- A schedule for tutoring in the Mathskeller, CB065, is available at www.mathskeller.org and then the link for Tutors. A schedule of office hours in Mathskeller may found on the link for Instructors. In addition, you should feel free to use the Mathskeller for studying if you have a free hour between classes.
- The notebook of handouts and solutions to selected problems is in the math library in the basement of POT.
- Assignments are available on the web from a link at <http://www.math.uky.edu/~rbrown/courses>
- Please know¹ integration formulae #1-4, 6-8, 10, 12, 13, 16 and 17 from the table of integrals inside the back cover of our textbook. You should also know the corresponding differentiation formulae.
- Trigonometry review. Below are some facts every mathematics student should know. The addition formulae will not be heavily used until the second test.

1. The definitions of \sin and \cos using the unit circle.
2. The identities $\sin(-x) = -\sin x$ and $\cos x = \cos(-x)$ which tell us that \sin is an odd function and \cos is an even function.
3. The definitions of \tan , \cot , \sec and \csc in terms of \sin and \cos .

¹"Know" means that you should memorize the formula and you should know why the formula is true.

4. The trigonometric functions for the special angles $0, \pi/6, \pi/4, \pi/3$, and any angle obtained by adding a multiple of $\pi/2$.
5. The Pythagorean identity $\sin^2 x + \cos^2 x = 1$ and its use in deriving the identities $1 + \tan^2 x = \sec^2 x$ and $1 + \cot^2 x = \csc^2 x$.
6. The addition formulae for sin and cos:

$$\sin(x + y) = \sin x \cos y + \cos x \sin y$$

and

$$\cos(x + y) = \cos x \cos y - \sin x \sin y.$$

7. Consequences of the addition formulae such as the subtraction and the double-angle formulae for sin and cos and the co-function identities:

$$f(\pi/2 - x) = \text{cof}(x) \text{ where } f \text{ may be sin, tan and sec.}$$

- On Thursday, 7 February 2002, the first recitation after the exam will take place in Inslab, CB335. At this recitation, we will give a few exercises to learn how to use Maple. Maple is a powerful, but extremely complex system for carrying out mathematical computations. We will not make much use of Maple, but you may occasionally find it useful when you are stuck on homework problems or to check your answer. You may want to bring a disk to this recitation.

If you registered after the first day of class, please give me your name and section number so that I can have an account created for you.

February 2, 2002