Review of calculus I facts

You should be able to do the following in order to be prepared for this course:

1. Write down the product rule.
2. Write down the quotient rule.
3. Write down the chain rule.
4. Have the basic derivatives memorized. Make yourself a hand–written table containing the following. Look up the answers if you don't recall them. Memorize this.
   (a) $\frac{d}{dx}x^n$
   (b) $\frac{d}{dx}e^x$
   (c) $\frac{d}{dx}a^x$
   (d) $\frac{d}{dx}\ln x$
   (e) $\frac{d}{dx}\log_a x$
   (f) $\frac{d}{dx}\sin x$
   (g) $\frac{d}{dx}\cos x$
   (h) $\frac{d}{dx}\tan x$
   (i) $\frac{d}{dx}\csc x$
   (j) $\frac{d}{dx}\sec x$
   (k) $\frac{d}{dx}\cot x$
   (l) $\frac{d}{dx}\arcsin x$
   (m) $\frac{d}{dx}\arccos x$
   (n) $\frac{d}{dx}\arctan x$
5. Practice by working through a good selection of problems from 1-50 in the chapter 3 review in the textbook. Feel free to skip any involving sinh, cosh, and tanh. Start with 2, 4, 11, 24, 37.
6. Write down the fundamental theorem of calculus.
7. Recall how integration by substitution works. Practice by trying various problems from 1-46 in section 5.5 (these get increasingly tricky). Start with 12, 13, 19, 21, 29, 42.