

I will give you the following formulas on Monday's test...

$$\int \frac{1}{\sqrt{1-x^2}} dx = \arcsin(x) + C \quad \int \sec^2(x) dx = \tan(x) + C$$
$$\tan^2(x) + 1 = \sec^2(x) \quad \sin^2(x) = \frac{1}{2}(1 - \cos(2x))$$

Some review problems/suggestions...

- For application problems make sure you can sketch pictures with “ $\Delta x$ ” slices to help explain where your integrals come from.
- Be able to compute volumes of solids of revolution. Section 7.2 problems 37-40 are good practice problems for rotations about a horizontal axis. Section 7.2 problems 15-18 are good practice for rotating about the  $y$ -axis. Problem #41 is a good practice problem as well.
- Be able to compute volumes using “hats”. Problems 6-8 in 7.2 are good practice.
- Work problems...I recommend 7.3 problems 5-7. If you can do #13, you really know what you're doing.
- Be able to verify something is a solution of a differential equation. Like 7.4 #9.
- Know how to solve separation of variables initial value problems. Section 7.4 problems 17-22 are good practice. Problems 26-31 are good practice as well.
- You may skip section 7.5 – I will not test on this section.
- Chapter 8 – know integration by parts, how to write down the “forms” for a partial fraction decomposition, and know how to use various trig. substitutions.
- To begin practicing integration techniques try a few integrals from sections 8.1, 8.2, and 8.3.
- Once you've got the basics down, I recommend the problems from section 8.4 since they don't tell you which method to use. Odd numbered problems 1-71 from section 8.4 are a great resource.
- And finally...Understand your quizzes! Try extra suggested homework coming from things that give you trouble. Review your notes and examples from class.