Math 107-250/350 **Homework #2** **19 Jan '07**

Due **Tuesday** Jan 23, at the start of the recitation.

It is **very** important that you clearly show what you are doing and that what you write makes sense and follows proper mathematical form. A correct answer poorly explained will not get full marks.

. 5 1. On page T-4 at the back of the textbook, is the reduction formula

$$\int \sec^n ax\,dx = \frac{\sec^{n-2} ax \tan ax}{a(n-1)} + \frac{n-2}{n-1}\int \sec^{n-2} ax\,dx, \quad n \neq 1$$

Using integration by parts and a suitable trig identity, derive this formula.

As usual, a is a constant.