PRINT Your Name:_____

Quiz 2 — January 24, 2011 – Section 3 – 8:00-8:50 recitation.

Remove everything from your desk except this page and a pencil or pen.

Circle your answer. **Show your work.** **Check** your answer.
The quiz is worth 5 points.

Find $\int x \sec x \tan x dx$.

Answer: We use integration by parts. Let $u = x$ and $dv = \sec x \tan x dx$. We calculate that $du = dx$ and $v = \sec x$. The given integral is

$$\int u dv = uv - \int v du = x \sec x - \int \sec x dx = \boxed{x \sec x - \ln|\sec x + \tan x| + C}$$

Check: The derivative of the proposed answer is

$$x \sec x \tan x + \sec x - \frac{\sec x \tan x + \sec^2 x}{\sec x + \tan x} = x \sec x \ \checkmark.$$