

PRINT Your Name: _____

Quiz 2 — September 5, 2012 – Section 10 – 11:15 – 12:05

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

The solution will be posted soon after the quiz is given.

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 $dv = \sec x \tan x dx$. Compute $du = dx$ and $v = \sec x$. The integral is equal to

$$x \sec x - \int \sec x dx = \boxed{x \sec x - \ln |\sec x + \tan x| + C}$$

Check: The derivative of the proposed answer is

$$\begin{aligned} x \sec x \tan x + \sec x - \frac{\sec x \tan x + \sec^2 x}{\sec x + \tan x} &= x \sec x \tan x + \sec x - \sec x \\ &= x \sec x \tan x. \checkmark \end{aligned}$$