Math 111 Section 006
Worksheet 3: Integration by Substitution
Deadline: Monday 12/07/15

**Instructions:** Read all prompts carefully and show any work. Please write your answers neatly on a separate sheet of paper. You do not need to attach this sheet when you turn it in. Worksheets turned in after 2pm on 12/07 will be considered late.

Evaluate the following integrals.

1. \[ \int \frac{1}{\cos^2 x \sqrt{1 + \tan x}} \, dx \]
2. \[ \int \frac{\cos \sqrt{x}}{\sqrt{x}} \, dx \]
3. \[ \int \cos^4 x \sin x \, dx \]
4. \[ \int \sin x \sec^2 (\cos x) \, dx \]
5. \[ \int \frac{\sec^2 (1/x)}{x^2} \, dx \]
6. \[ \int_{-1}^{2} x^2 \sqrt{1 + x^3} \, dx \]