Math 222 (Steven Sam), Fall 2016
Homework 2, due September 21

Only the starred problems (7 total) need to be submitted for grading.

Chapter 1.9 (pages 26–27) from book: 1, 2, 3, 4, 6*, 10, 11*, 16*, 17*, 22*

For some of the following problems, Table 2 in the book (p.35) might be helpful for checking certain steps, but derive whatever formulas you need. Also, $\sec x = \frac{1}{\cos x}$ by definition.

(E1*) Evaluate $\displaystyle\int \frac{dx}{x^2\sqrt{x^2+4}}$.

(E2) Show that $\displaystyle\int \sec x \; dx = \ln|\sec x + \tan x| + C$. [Hint: multiply $\sec x$ by $\frac{\sec x + \tan x}{\sec x + \tan x}$.]

(E3*) Evaluate $\displaystyle\int \frac{x \; dx}{\sqrt{x^4-100}}$. [You'll need the formula in (E2) but you don't have to turn in the solution for (E2).]

(E4) Evaluate $\displaystyle\int e^x \sqrt{9-e^{2x}} \; dx$.

(E5) Evaluate $\displaystyle\int x^3 \sqrt{9-x^2} \; dx$.