Name: —————————————————————————

- There are 12 points possible on this proficiency, one point per problem. **No partial credit will be given.**

- You have 1 hour to complete this proficiency.

- No aids (book, calculator, etc.) are permitted.

- You do **not** need to simplify your expressions.

- Correct parenthesization is required.

- Do not put a "$+C$" where it does not belong and put a "$+C$" in the correct place at least one time.

1. **[12 points]** Compute the integrals of the following functions.

   a. $\displaystyle\int_{-1}^{1} (4x+2)\, dx$

   b. $\displaystyle\int_{0}^{1} x\sqrt{2x^2+2}\, dx$

   c. $\displaystyle\int \left(\sin(5) + e^{-4x}\right) dx$

d. $\int \left(t - \sec^2(kt) \right) dt$

e. $\int 7x^2 \cos(x^3 + 4)\, dx$

f. $\int \dfrac{1}{\sqrt{1 + 25x^2}}\, dx$

g. $\displaystyle \int 3 \left(\frac{\pi x + 4}{x} \right) dx$

h. $\displaystyle \int \frac{x + \sec(x)\tan(x)}{x^2 + 2\sec(x)} dx$

i. $\displaystyle \int \frac{1}{x(\ln(x))^3} dx$

j. $\int \left(x^{1.3} + \dfrac{e^x}{5} + \sin(x) \right) dx$

k. $\int \sec\left(\dfrac{x}{2}\right) \tan\left(\dfrac{x}{2}\right) dx$

l. $\int 2x(3 - 4x)^8 \, dx$