Name: ———————————————————————   ——————— / 12

Instructor: Bueler | Jurkowski | Maxwell

- There are 12 points possible on this proficiency: one point per problem with no partial credit.

- You have 30 minutes to complete this proficiency.

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

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

- For at least one problem you must indicate correct use of a constant of integration.

- Circle your final answer.

1. **[12 points]** Compute the following definite/indefinite integrals.

    a. $\displaystyle \int 9\cos(x) - \sqrt{x} + e^9 \, dx$

    b. $\displaystyle \int_0^2 t^2(1-t) \, dt$

    c. $\displaystyle \int \sec^2(9x) \, dx$

d. $\displaystyle\int \frac{x^2}{\sqrt{x^3 - 7}}\, dx$

e. $\displaystyle\int \frac{\cos(x)}{\sin(x)}\, dx$

f. $\displaystyle\int w\sqrt{3 + w}\, dw$

g. $\displaystyle \int e^t - t^3 \sin(t^4)\, dt$

h. $\displaystyle \int \frac{8}{\sqrt{1-x^2}}\, dx$

i. $\displaystyle \int \frac{(2+\ln(x))^2}{x}\, dx$

j. $\displaystyle\int \frac{x^2 - 9}{x}\, dx$

k. $\displaystyle\int \sec^2(x)\tan^5(x)\, dx$

l. $\displaystyle\int e^{\pi x}\, dx$