Name: _____   _____ / 12

- There are 12 points possible on this proficiency: **One point per problem. No partial credit.**

- A passing score is 10/12.

- You have 60 minutes to complete this proficiency.

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

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

- Be sure to include constants of integration when appropriate.

- Circle your final answer.

Compute the following integrals.

1. $\displaystyle \int_1^4 \left(\frac{1}{x} - \sqrt{x} \right) dx$

2. $\displaystyle \int \left(7^{\frac{1}{3}} + e^{5x} - \pi x^2 \right) dx$

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

4. $\displaystyle\int (x-2)(x-3)\,dx$

5. $\displaystyle\int \sec^2(x)\,e^{\tan(x)}\,dx$

6. $\displaystyle\int \left(\frac{8x}{1-x^2} + \cos(x) \right)\,dx$

7. $\int x\sqrt{x-9}\,dx$

8. $\int \cos(x)\,(\sin(x)-3)^5\,dx$

9. $\int \sec^2\left(\dfrac{\pi}{2}t\right)\,dt$

10. $\displaystyle \int \frac{6}{\sqrt{1-s^2}}\, ds$

11. $\displaystyle \int_{-1}^{0} e^{-8t+5}\, dt$

12. $\displaystyle \int \frac{2x^3-5}{x}\, dx$