

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

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

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

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

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

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

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

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

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

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

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

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