

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. $\int_1^2 \frac{x^3 - 1}{x^2} dx$

2. $\int (\cos(x) - 1) dx$

3. $\int \frac{4 - 2 \ln x}{x} dx$

4. $\int \tan^2 x \sec^2 x dx$

5. $\int z\sqrt{4-x} dx$

6. $\int \frac{1+x^2}{2} + \frac{2}{1+x^2} dx$

7. $\int (\sin x)e^{\cos x} dx$

8. $\int (x+3)(x-2) dx$

9. $\int x \cos(2-7x^2) dx$

10. $\int \sqrt{x}(x^2 + 3x + 2) dx$

11. $\int \left(7e^x - \frac{1}{x^3}\right) dx$

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