

Name: _____

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- There are 12 points possible on this proficiency: one point per problem with no partial credit.
- A passing score is 10/12.
- You have 30 minutes to complete this proficiency.
- No aids (book, calculator, etc.) are permitted.
- Be sure to include constants of integration where appropriate.
- You do **not** need to simplify your expressions.
- Box your final answer.

Evaluate the integrals.

1.
$$\int \left(\frac{2}{x^2} - \frac{x}{4} + \frac{\sqrt{3}}{3} \right) dx$$

2.
$$\int_0^{\pi/3} (e^t - \sin(t)) dt$$

3.
$$\int \sec(\theta/5) \tan(\theta/5) d\theta$$

4. $\int \frac{1 + \sqrt{x}}{x^4} dx$

5. $\int \pi^2 dx$

6. $\int (\sec v)^2 (1 + \tan v)^3 dv$

7. $\int \frac{11e^{\sqrt{x}}}{\sqrt{x}} dx$

8. $\int_1^2 \frac{\ln x}{3x} dx$

9. $\int e^{2x} \cos(3e^{2x}) dx$

10. $\int x + \frac{x^2}{x^3 + 1} dx$

11. $\int x\sqrt{x-1} dx$

12. $\int \left(\frac{8}{\sqrt{1-x^2}} + e^{-x} \right) dx$