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

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

2. $\displaystyle \int_0^{\pi/6} \left(e^t - \sin(t) \right) dt$

3. $\displaystyle \int \pi^2 \, dx$

4. $\displaystyle \int \sec(\theta/2)\tan(\theta/2)\ d\theta$

5. $\displaystyle \int \frac{1+\sqrt{x}}{x^3}\ dx$

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

7. $\displaystyle\int_1^2 \frac{\ln x}{2x}\, dx$

8. $\displaystyle\int e^{2x} \cos(3e^{2x})\, dx$

9. $\displaystyle\int \frac{17 e^{\sqrt{x}}}{\sqrt{x}}\, dx$

10. $\displaystyle\int x\sqrt{x-2}\, dx$

11. $\displaystyle\int x + \frac{x^2}{x^3+1}\, dx$

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