

Review for Gateway (Exam on February 15, 2010)

Compute the following integrals. (You do not need to simplify your answers.) Be very careful with notation, signs, parentheses, etc. **NO PARTIAL CREDIT WILL BE GIVEN.** (Circle or box your final answer.)

1. $\int 4^x + x^4 dx$

2. $\int \frac{1}{\sqrt[4]{x}} (x^\pi - x^{-\pi}) dx$

3. $\int \frac{1}{t(\ln t)^2} dt$

4. $\int x^3 e^x dx$

5. $\int x^3 e^{x^4} dx$

6. $\int x^3 e^{x^2} dx$

7. $\int \frac{3p^2 + 11p + 8}{p^3 + 4p^2 + 4p} dp$

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

9. $\int \frac{1}{\sqrt{5 - t^2}} dt$

10. $\int \frac{1}{\sqrt{3 - t^2 + 2t}} dt$

11. $\int \frac{1 + 3x}{x^2 + 2x + 5} dx$

12. $\int \theta^3 \cos(\theta^2) d\theta$

13. $\int e^x \sin(2x) dx$

14. $\int \frac{w^3 + 5w^2 + 7w - 11}{w^2 + 6w + 13} dw$

15. $\int \frac{x^{26}}{x^{54} + 4} dx$

16. $\int (\ln(x^7))^2 dx$