

Integration Practice**Math 232 Spring 2003**

The following thirty integrals should help you practice your integration skills. If homework is collected on Friday then these problems will be collected. At least two of these problems will appear on Test III, and at least one will appear on the final.

1. $\int \cos^7 x \, dx$

11. $\int (e^{3 \ln x})^2 \, dx$

21. $\int \frac{\arccos x}{\sqrt{1-x^2}} \, dx$

2. $\int x \sec x \tan x \, dx$

12. $\int \frac{\ln 2x}{x^2} \, dx$

22. $\int \sin^{-1} x \, dx$

3. $\int \cot^6 x \, dx$

13. $\int x^3 \sin x \, dx$

23. $\int 2\pi x(8-x^{\frac{3}{2}}) \, dx$

4. $\int \csc^4 x \cot^4 x \, dx$

14. $\int_0^1 \ln(1-3x) \, dx$

24. $\int_0^{\frac{\pi}{2}} \sin^2 x \cos^5 x \, dx$

5. $\int \sin^2 x \cos^2 x \, dx$

15. $\int \frac{\sqrt{x}}{1-x\sqrt{x}} \, dx$

25. $\int e^x \cos 2x \, dx$

6. $\int \sin(\ln x) \, dx$

16. $\int \sin^4 3x \, dx$

26. $\int \ln \left(\frac{x^3}{2x+1} \right) \, dx$

7. $\int \frac{\sin^3 x}{\sqrt{\cos x}} \, dx$

17. $\int (\ln x)^3 \, dx$

27. $\int \csc^3 x \, dx$

8. $\int \tan^3 x \sec^3 x \, dx$

18. $\int (x \ln x)^{-1} \, dx$

28. $\int_1^2 \frac{x^2+3x+7}{\sqrt{x}} \, dx$

9. $\int \tan x \ln(\cos x) \, dx$

19. $\int \csc 3x \, dx$

29. $\int (\sin x + e^x)^2 \, dx$

10. $\int_1^3 \frac{e^{\frac{1}{x}}}{x^2} \, dx$

20. $\int x^3 \cos x^2 \, dx$

30. $\int x(x+5)^{\frac{7}{2}} \, dx$