

Integration Practice**Math 232 Fall 2002**

The following thirty-six integrals should help you practice your integration skills. If homework is collected on Wednesday then these problems will be collected.

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

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

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

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

14. $\int \frac{1}{4+4x^2+x^4} dx$

26. $\int \frac{3x^3-2}{x^2+4} dx$

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

15. $\int x^3 \sin x dx$

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

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

16. $\int_0^1 \ln(1+x^2) dx$

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

5. $\int \cos^7 x dx$

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

29. $\int e^x \cos 2x dx$

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

18. $\int \sin^4 2x dx$

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

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

19. $\int (\ln x)^3 dx$

31. $\int \frac{\sqrt{1-x^2}}{x^4} dx$

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

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

32. $\int \frac{x^2+3x+7}{\sqrt{x}} dx$

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

21. $\int \csc 3x dx$

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

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

22. $\int x^3 \cos x^2 dx$

34. $\int \sec^4 x dx$

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

23. $\int \sin^2 x \cos^2 x dx$

35. $\int \csc^3 x dx$

12. $\int_0^1 \frac{x^2}{(1-x^2)^{\frac{3}{2}}} dx$

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

36. $\int \frac{1}{x\sqrt{4x^2+9}} dx$