Exam 2 - Practice Questions

Below you will find many more indefinite integrals than you may in fact be required to do in order to adequately prepare for the next exam. Evaluate as many as you feel you need to.

1. $\int \dfrac{2x+5}{x-3}\, dx$
2. $\int x^2\sqrt{x-1}\, dx$
3. $\int e^{x+e^x}\, dx$

4. $\int \dfrac{\cos\sqrt{x}}{\sqrt{x}}\, dx$
5. $\int x^2\sin 2x\, dx$
6. $\int \sin^{-1} 2x\, dx$

7. $\int \tan^2 x\, dx$
8. $\int \cos^4 2x\, dx$
9. $\int \dfrac{1}{x^2\sqrt{1-x^2}}\, dx$

10. $\int \dfrac{x^2}{x+1}\, dx$
11. $\int \dfrac{x^2}{(x+1)^3}\, dx$
12. $\int \dfrac{x^3}{x^2+1}\, dx$

13. $\int \dfrac{x^2}{x^3+1}\, dx$
14. $\int \dfrac{x^2+2}{x^3+1}\, dx$
15. $\int \dfrac{e^x}{e^{2x}+1}\, dx$

16. $\int \ln x\, dx$
17. $\int \dfrac{1+x}{1+x^2}\, dx$
18. $\int \sqrt{x}\ln x\, dx$

19. $\int e^{2x}\cos 3x\, dx$
20. $\int x\sin x\cos x\, dx$
21. $\int (\ln x)^2\, dx$

22. $\int x\sin^3(x^2)\, dx$
23. $\int \sin^2 x\cos^2 x\, dx$
24. $\int x\tan^{-1} x\, dx$

25. $\int \dfrac{x^2}{\sqrt{4x-x^2}}\, dx$
26. $\int \dfrac{1}{\sqrt{x^2+4x+8}}\, dx$
27. $\int \dfrac{6x^2+5x-3}{x^3+2x^2-3x}\, dx$

28. $\int \dfrac{\sin x-\cos x}{\sin x+\cos x}\, dx$
29. $\int \sin^2 2x\cos^3 2x\, dx$
30. $\int x^3\ln x\, dx$

31. $\int \dfrac{\sqrt{x-2}}{x+2}\, dx$
32. $\int \dfrac{\sqrt{1+\ln x}}{x\ln x}\, dx$
33. $\int \tan^3 x\sec^4 x\, dx$

34. $\int \dfrac{x}{x^2+3x+2}\, dx$
35. $\int \dfrac{x^3+x+1}{x^4+2x^2+4x}\, dx$
36. $\int \cos\sqrt{x}\, dx$

37. $\int e^{3x}\cos 5x\, dx$
38. $\int \dfrac{x}{1-x^2+\sqrt{1-x^2}}\, dx$
39. $\int \dfrac{1+\cos x}{\sin x}\, dx$

40. $\int x^5 e^{-x^3}\, dx$
41. $\int \dfrac{e^{\tan^{-1} x}}{x^2+1}\, dx$
42. $\int \dfrac{1}{x^2-9}\, dx$

43. $\int (x+\sin x)^2\, dx$
44. $\int \sin x\cos(\cos x)\, dx$
45. $\int \dfrac{x\ln x}{\sqrt{x^2-1}}\, dx$

46. $\int \sqrt{1+x-x^2}\, dx$
47. $\int \sqrt{\dfrac{1+x}{1-x}}\, dx$
48. $\int \dfrac{1}{\sqrt{x+1}+\sqrt{x}}\, dx$

49. $\int \dfrac{1}{1+2e^x-e^{-x}}\, dx$
50. $\int \dfrac{x^3+1}{x^3-x^2}\, dx$
51. $\int \dfrac{\ln(x+1)}{x^2}\, dx$

52. $\int \dfrac{\sin 2x}{\sqrt{9-\cos^4 x}}\, dx$
53. $\int x\sqrt{2x-25}\, dx$
54. $\int \sec^3 x\, dx$