

7-32 ■ Evaluate the indefinite integral.

7. $\int 2x(x^2 + 3)^4 dx$

8. $\int xe^{x^2} dx$

9. $\int \frac{(\ln x)^2}{x} dx$

10. $\int x^3(1 - x^4)^5 dx$

11. $\int \sqrt{x-1} dx$

12. $\int (2-x)^6 dx$

13. $\int \frac{dx}{5-3x}$

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

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

16. $\int t^2 \cos(1-t^3) dt$

17. $\int \frac{2}{(t+1)^6} dt$

18. $\int \sqrt[3]{3-5y} dy$

19. $\int \sin 3\theta d\theta$

20. $\int \frac{\tan^{-1}x}{1+x^2} dx$

21. $\int e^x \sqrt{1+e^x} dx$

22. $\int \cot x dx$

23. $\int \cos^4 x \sin x dx$

24. $\int \frac{\cos(\pi/x)}{x^2} dx$

25. $\int \sqrt{\cot x} \csc^2 x dx$

26. $\int \cos x \cos(\sin x) dx$

27. $\int \frac{e^x + 1}{e^x} dx$

28. $\int \frac{e^x}{e^x + 1} dx$

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

30. $\int \frac{\sin x}{1 + \cos^2 x} dx$

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

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

33-36 ■ Evaluate the indefinite integral. Illustrate and check that your answer is reasonable by graphing both the function and its antiderivative (take $C = 0$).

33. $\int \frac{3x-1}{(3x^2-2x+1)^4} dx$

34. $\int \frac{x}{\sqrt{x^2+1}} dx$

35. $\int \sin^3 x \cos x dx$

36. $\int \tan^2 \theta \sec^2 \theta d\theta$

37-52 ■ Evaluate the definite integral.

37. $\int_0^2 (x-1)^{25} dx$

38. $\int_0^7 \sqrt{4+3x} dx$

39. $\int_0^1 x^2(1+2x^3)^5 dx$

40. $\int_0^{\pi/2} e^{\sin x} \cos x dx$

41. $\int_0^1 \cos \pi t dt$

42. $\int_0^{\pi/4} \sin 4t dt$

43. $\int_1^4 \frac{e^{\sqrt{x}}}{\sqrt{x}} dx$

44. $\int_1^2 \frac{dx}{3x+1}$

45. $\int_1^2 x\sqrt{x-1} dx$

46. $\int_{-\pi/2}^{\pi/2} \frac{x^2 \sin x}{1+x^6} dx$

47. $\int_0^{13} \frac{dx}{\sqrt[3]{(1+2x)^2}}$

48. $\int_0^4 \frac{x}{\sqrt{1+2x}} dx$

49. $\int_{-\pi/6}^{\pi/6} \tan^3 \theta d\theta$

50. $\int_0^a x\sqrt{a^2-x^2} dx$

51. $\int_e^{e^4} \frac{dx}{x\sqrt{\ln x}}$

52. $\int_0^{1/2} \frac{\sin^{-1}x}{\sqrt{1-x^2}} dx$

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5.5