

Evaluate the following integrals:

1. $e^{x \log a} + e^{a \log x} + e^{a \log a}$

2. $\frac{1}{1+\cos x}$

3. $\tan^{-1}(\sec x + \tan x)$

4. $\frac{\sin^6 x + \cos^6 x}{\sin^2 x \cos^2 x}$

5. $\tan^{-1} \sqrt{\frac{1-\sin x}{1+\sin x}}$

6. $\frac{1}{\sqrt{3x+4} - \sqrt{3x+1}}$

7. $\frac{\sin x}{1+\sin x}$

8. $\frac{x^3}{x+2}$

9. $\sin^3 x \cos^3 x$

10. $\cos^4 x$

11. $\cos 2x \cos 4x$

12. $\frac{x^4+3}{x^2+1}$

13. $\sin 4x \cos 7x$

14. $\frac{1+\cos x}{1-\cos x}$

15. $\frac{e^x - e^{-x}}{e^x + e^{-x}}$

16. $\frac{\sin 2x}{a^2 \sin^2 x b^2 \cos^2 x}$

17. $\frac{\sin x}{\sin(a-x)}$

18. $\frac{1}{\sin(x-a) \sin(x-b)}$

19. $\frac{1-\cot x}{1+\cot x}$

20. $\frac{1}{e^x+1}$

21. $\frac{1}{\sqrt{x}(\sqrt{x}+1)}$

22. $\frac{\sin 2x}{(a+b \cos x)^2}$

23. $\frac{\sec^2(2 \tan^{-1} x)}{1+x^2}$

24. $\sin^2 x \cos^5 x$

25. $\sin^7 x$

26. $\tan^3 x$

27. $\left(\frac{x+1}{x}\right)(x + \log)^2$

28. $\frac{\cos^5 x}{\sin x}$

29. $\frac{1}{\sqrt{9-25x^2}}$

30. $\frac{x^4+1}{x^2+1}$

31. $\frac{1}{3+2x-x^2}$

32. $\frac{1}{x^2+8x+20}$

33. $\frac{e^x}{e^{2x}+6e^x+5}$

34. $\frac{1}{x(x^n+1)}$

35. $\frac{x}{x^4-x^2+1}$

36. $\frac{1}{\sqrt{9+8x-x^2}}$

37. $\frac{1}{\sqrt{16-6x-x^2}}$

38. $\frac{2x}{\sqrt{1-x^2-x^4}}$

39. $\frac{2x-3}{x^2+3x-18}$

40. $\frac{2 \sin 2\theta - \cos \theta}{6 - \cos^2 \theta - 4 \sin \theta}$

41. $\frac{x+2}{2x^2+6x+5}$

$$42. \frac{x^2}{x^2+6x+12}$$

$$43. \sqrt{\frac{a-x}{a+x}}$$

$$44. \frac{3x+1}{\sqrt{5-2x-x^2}}$$

$$45. \frac{1}{a^2 \sin^2 x + b^2 \cos^2 x}$$

$$46. \frac{\sin x}{\sin 3x}$$

$$47. \frac{1}{2-3\cos 2x}$$

$$48. \frac{\sin 2x}{\sin^4 x + \cos^4 x}$$

$$49. \frac{1}{1-2\sin x}$$

$$50. \frac{1}{5+4\cos x}$$

$$51. \frac{1}{3+2\sin x + \cos x}$$

$$52. \frac{3\sin x + 2\cos x}{3\cos x + 2\sin x}$$

$$53. (\log x)^2$$

$$54. \sin^{-1} x$$

$$55. \frac{x - \sin x}{1 - \cos x}$$

$$56. \sec^3 x$$

$$57. \frac{\sin^{-1} x}{(1-x^2)^{\frac{3}{2}}}$$

$$58. x^2 \tan^{-1} x$$

$$59. \tan^{-1} \left(\frac{2x}{1-x^2} \right)$$

$$60. \frac{\sin^{-1} x}{x^2}$$

$$61. e^x \left(\frac{1 - \sin x}{1 - \cos x} \right)$$

$$62. \frac{\log x}{(1 + \log x)^2}$$

$$63. \frac{2-x}{(1-x)^2} e^x$$

$$64. \frac{1}{\log x} - \frac{1}{(\log)^2}$$

$$65. e^{ax} \cos bx$$

$$66. \sqrt{7x - 10 - x^2}$$

$$67. \frac{\sqrt{16 + (\log x)^2}}{x}$$

$$68. (3x - 2)\sqrt{x^2 + x + 1}$$

$$69. (x + 1)\sqrt{x^2 - x - 1}$$

$$70. \frac{2x-1}{(x-1)(x+2)(x-3)}$$

$$71. \frac{1}{\sin x - \sin 2x}$$

$$72. \frac{3x+1}{(x-2)^2(x+2)}$$

$$73. \frac{8}{(x+2)(x^2+4)}$$

$$74. \frac{x^2}{(x^2+1)(x^2+4)}$$

$$75. \frac{\tan x + \tan^3 x}{1 + \tan^3 x}$$

$$76. \frac{\sin 2x}{(1 + \sin x)(2 + \sin x)}$$

$$77. \frac{1}{x(x^5+1)}$$

$$78. \frac{x^2-1}{x^4+x^2+1}$$

$$79. \frac{x^2+4}{x^4+16}$$

$$80. \frac{1}{x^4+1}$$

$$81. \sqrt{\tan x}$$

$$82. \sqrt{\cot x}$$

$$83. \frac{1}{\sin^4 x + \cos^4 x}$$

$$84. \frac{x^2-1}{x^4+1}$$

$$85. \frac{1}{(x-3)\sqrt{x+1}}$$

$$86. \frac{1}{(x^2-4)\sqrt{x+1}}$$

$$87. \frac{1}{(x+1)\sqrt{x^2-1}}$$

$$88. \frac{1}{x^2\sqrt{1+x^2}}$$

$$89. \frac{x}{x^3+x^2+x+1}$$

$$90. \frac{\sin(x-a)}{\sin(x+a)}$$

91. $\frac{(x+1)e^x}{(x+2)^2}$
92. $\frac{1-\tan x}{x+\log(\cos x)}$
93. $\frac{\sqrt{x^2+a^2}}{x}$
94. $\frac{e^x}{\sqrt{5-4e^x-e^{2x}}}$
95. $\frac{x^2+1}{(x+1)^2}$
96. $\sqrt{1+2\tan x(\sec x + \tan x)}$
97. $e^{\sqrt{x}} \frac{\operatorname{cose}^{\sqrt{x}}}{\sqrt{x}}$
98. $\cos(\log x)$
99. $\frac{2\sin 2a - \cos a}{6 - \cos^2 a - 4\sin a}$
100. $\tan^{-1}\left(\frac{\sqrt{1-\cos 2x}}{\sqrt{1+\cos 2x}}\right)$
101. $\frac{\sin 3x}{\sin 5x \sin 2x}$
102. $\frac{\cos x - \sin x}{1 - \sin 2x}$
103. $\frac{\cos^5 x}{\sin x}$
104. $\frac{1}{\sqrt{x+2} - \sqrt{x+3}}$
105. $e^{2x} \left(\frac{\sin 4x - 2x}{1 - \cos 4x}\right)$
106. $\frac{\sqrt{x+1} - \sqrt{x-1}}{\sqrt{x+1} + \sqrt{x-1}}$
107. $\frac{1}{(1+e^x)(1-e^{-1})}$
108. $\int \tan x \tan 2x \tan 3x dx$
109. $\int \frac{\cos(x+a)}{\sin(x+b)}$
110. $\int \sin^{-1}\left(\sqrt{\frac{x}{a+x}}\right) dx$
111. $\int \sqrt{\frac{1-\sqrt{x}}{1+\sqrt{x}}} dx$
112. $\int \frac{1}{\sin^2 x + \sin 2x} dx$
113. $\int x\sqrt{x^2+x} dx$
114. $\int \frac{x^2}{(1+x^3)(2+x^3)} dx$
115. $\int \frac{\sin x}{\sin 4x} dx$
116. $\int \frac{x^2+x+1}{(x+1)^2(x+2)} dx$
117. $\int \frac{x^2}{(x\sin x + \cos x)^2} dx$
118. $\int \frac{1}{x^4-5x^2+16} dx$
119. $\int \frac{(x-3)e^x}{(x-1)^3} dx$
120. $\int \frac{(x^2+1)(x^2+4)}{(x^2+3)(x^2-5)} dx$