

1. Evaluate: $\int \log_x x dx$
2. Evaluate: $\int (3^{\log_x 2} - 2^{\log_x 3}) dx$
3. Evaluate: $\int (x^m + m^x + m^m + \frac{m}{x}) dx$
4. Evaluate: $\int 2^x \cdot 3^x \cdot dx$
5. Evaluate: $\int \tan^2 x dx$
6. Evaluate: $\int \cot^2 x dx$
7. Evaluate: $\int \frac{dx}{\sin^2 x \cos^2 x}$
8. Evaluate: $\int \left(1 + \tan\left(x + \frac{3\pi}{8}\right)\right) \left(1 + \tan\left(\frac{\pi}{8} - x\right)\right) dx$
9. Evaluate: $\int (\tan x + \cot x)^2 dx$
10. Evaluate: $\int \frac{dx}{1 + \cos^2 x}$
11. Evaluate: $\int (3^{\log_5 x} - 2^{\log_5 x}) dx$
12. Evaluate: $\int \left(1 + \tan\left(\frac{\pi}{8} - x\right)\right) \left(1 + \tan\left(\frac{\pi}{8} + x\right)\right) dx$
13. Evaluate: $\int \left(\frac{8^{1+x} + 4^{1+x}}{2^{2x}}\right) dx$
14. Evaluate: $\int \left(\frac{x}{m} + \frac{m}{x} + x^m + m^x\right) dx$
15. Evaluate: $\int \frac{(a^x + b^x)^2}{a^x b^x} dx$
16. Evaluate: $\int \frac{(2^x + 3^x)^2}{2^x \cdot 3^x} dx$
17. If $f'(x) = \frac{1}{x} + \frac{1}{\sqrt{1-x^2}}$ and $f(1) = \frac{\pi}{2}$, find $f(x)$.
18. If $f'(x) = a \cos x + b \sin x$ and $f'(0) = 4, f''(0) = 3, f\left(\frac{\pi}{2}\right) = 5$, find $f(x)$.
19. Evaluate: $\int \frac{dx}{1 - \sin x}$
20. Evaluate: $\int \left(\frac{\sin^4 x + \cos^4 x}{\sin^2 x \cos^2 x}\right) dx$
21. Evaluate: $\int \left(\frac{\sin^6 x + \cos^6 x}{\sin^2 x \cos^2 x}\right) dx$
22. Evaluate: $\int \left(\frac{\cos 2x - \cos \alpha}{\cos x - \cos \alpha}\right) dx$
23. Evaluate: $\int \left(\frac{\cos^4 x - \sin^4 x}{\sqrt{1 + \cos 4x}}\right) dx$
24. Evaluate: $\int \left(\frac{1 + \tan^2 x}{1 + \cot^2 x}\right) dx$
25. Evaluate: $\int \left(\frac{\cos x - \cos 2x}{1 - \cos x}\right) dx$
26. Evaluate: $\int \left(\frac{\sqrt{x^4 + x^{-4} + 2}}{x^3}\right) dx$
27. Evaluate: $\int \left(\frac{5\cos^3 x + 3\sin^3 x}{\cos^2 x \sin^2 x}\right) dx$
28. Evaluate: $\int \left(\frac{\cos x - \sin x}{\cos x + \sin x}\right) (1 + \sin 2x) dx$
29. Evaluate: $\int \left(\frac{\cos 5x + \cos 4x}{1 + 2\cos 3x}\right) dx$
30. Evaluate: $\int \left(\frac{\cos x - \cos 2x}{1 - \cos x}\right) dx$
31. Evaluate: $\int \frac{dx}{(\tan x + \cot x + \sec x + \cos x)}$
32. Evaluate: $\int \frac{x}{x+1} dx$
33. Evaluate: $\int \frac{(1+x)^2}{x(1+x^2)} dx$
34. Evaluate: $\int \frac{x^2 - 2}{x^2 + 1} dx$
35. Evaluate: $\int \frac{x-1}{(x^{2/3} + x^{1/3} + 1)} dx$
36. Evaluate: $\int \left(\frac{x^4 + 2}{x^2 + 2}\right) dx$

37. Evaluate: $\int \left(\frac{x^4 - 3}{x^2 + 1} \right) dx$

38. Evaluate: $\int \left(\frac{x^6 - 1}{x^2 + 1} \right) dx$

39. Evaluate: $\int \left(\frac{x^8 + x^4 + 1}{x^4 + x^2 + 1} \right) dx$

40. Evaluate: $\int \left(\frac{x^4}{x^2 + 1} \right) dx$

41. Evaluate: $\int \left(\frac{x^4 + x^2 + 1}{x^2 + x + 1} \right) dx$

42. Evaluate: $\int \left(\frac{x^6 + 1}{x^2 + 1} \right) dx$

43. Evaluate: $\int \sin^{-1}(\sin x) dx$

44. Evaluate: $\int \sin^{-1}(\cos x) dx$

45. Evaluate: $\int \tan^{-1} \left(\sqrt{\frac{1 - \cos 2x}{1 + \cos 2x}} \right) dx$

46. Evaluate: $\int \tan^{-1} \left(\frac{\sin 2x}{1 + \cos 2x} \right) dx$

47. Evaluate: $\int \tan^{-1} \left(\sqrt{\frac{1 - \cos 2x}{1 + \cos 2x}} \right) dx$

48. Evaluate: $\int \tan^{-1} \left(\frac{\sin x}{1 - \cos x} \right) dx$

49. Evaluate: $\int \tan^{-1} \left(\sqrt{\frac{1 - \sin x}{1 + \sin x}} \right) dx$

50. Evaluate: $\int \tan^{-1} \left(\frac{\sin x}{1 + \cos x} \right) dx$

51. Evaluate: $\int \tan^{-1} \left(\frac{\cos x}{1 - \sin x} \right) dx$

52. Evaluate: $\int \tan^{-1} \left(\frac{1 - \sin x}{\cos x} \right) dx$

53. Evaluate: $\int \tan^{-1} \left(\frac{\sqrt{(1 + \sin x)} + \sqrt{(1 - \sin x)}}{\sqrt{(1 + \sin x)} - \sqrt{(1 - \sin x)}} \right) dx$

54. Evaluate: $\int \tan^{-1}(\sec x + \tan x) dx$

55. Evaluate: $\int \tan^{-1} \left(\frac{\sin 2x}{1 + \cos 2x} \right) dx$