

TOPIC: INDEFINITE INTEGRATION

Page | 1

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

2. Evaluate $\int \frac{(\log x)^2 dx}{x}$

3. Evaluate $\int \frac{e^{\tan^{-1} x}}{1+x^2} dx$

4. Evaluate $\int (ax+b)^3 dx$

5. Evaluate $\int \frac{(1+\log x)^2}{x} dx$

6. Evaluate $\int \frac{e^{2x} - e^{-2x}}{e^{2x} + e^{-2x}} dx$

7. Evaluate $\int \frac{2 \cos x}{3 \sin^2 x} dx$

8. Evaluate $\int \frac{x^3-1}{x^2} dx$

9. Evaluate $\int \sec^2(7-4x) dx$

10. Evaluate $\int \frac{\log x}{x} dx$

11. Evaluate $\int 2^x dx$

12. Evaluate $\int \frac{\log(\sin x)}{\tan x} dx$

13. Evaluate $\int (\operatorname{cosec}^2 x - \cot x) e^x dx$

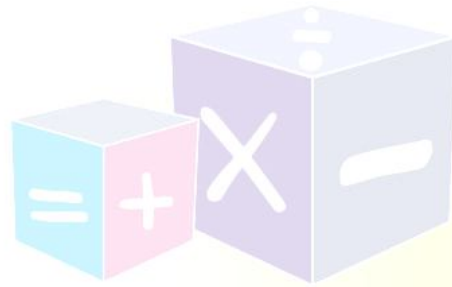
14. Evaluate $\int \frac{\sec^2 \sqrt{x}}{\sqrt{x}} dx$

15. Evaluate $\int \frac{\sin \sqrt{x}}{\sqrt{x}} dx$

16. Evaluate $\int \frac{\sec^2 x}{3 + \tan^2 x} dx$

17. Find $\int \frac{\sin^2 x - \cos^2 x}{\sin^2 x \cdot \cos^2 x} dx$

18. Find $\int \frac{\sin^6 x}{\cos^8 x} dx$



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19. Evaluate $\int \frac{dx}{\sin^2 x \cdot \cos^2 x}$

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

21. Write the anti-derivative of $\left(3\sqrt{x} + \frac{1}{\sqrt{x}}\right)$

22. Evaluate $\int (1-x)\sqrt{x} dx$

23. Evaluate $\int \frac{\cos\sqrt{x} dx}{\sqrt{x}}$

24. Evaluate $\int \frac{2\cos x}{\sin^2 x} dx$

25. Evaluate $\int \frac{x^3 - x^2 + x - 1}{x-1} dx$

26. Write the value of $\int \frac{1 - \sin x}{\cos^2 x} dx$

27. Given, $\int e^x (\tan x + 1) \sec x dx = e^x f(x) + C$

Write f(x) satisfying above.

28. Evaluate $\int \frac{2}{1 + \cos 2x} dx$

29. Write the value of $\int \frac{x + \cos 6x}{3x^2 + \sin 6x} dx$

30. Write the value of $\int \frac{dx}{x^2 + 16}$

31. Write the value of $\int \frac{\sec^2 x}{\operatorname{cosec}^2 x} dx$

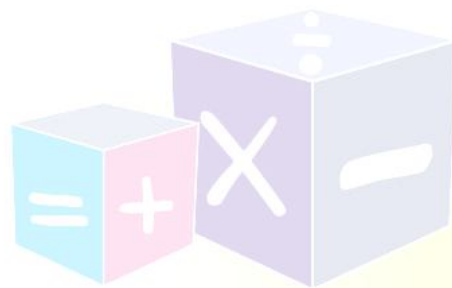
32. Write the value of $\int \frac{2 - 3\sin x}{\cos^2 x} dx$

33. Evaluate $\int \frac{x \cdot \cos^{-1} x}{\sqrt{1-x^2}} dx$

34. Evaluate $\int \frac{\sin^6 x + \cos^6 x}{\sin^2 x \cos^2 x} dx$

35. Evaluate $\int \frac{(3\sin x - 2)\cos x}{5 - \cos^2 x - 4\sin x} dx$

36. Evaluate $\int e^{2x} \left(\frac{1 - \sin 2x}{1 - \cos 2x} \right) dx$



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37. Evaluate $\int \frac{3x+1}{(x+1)^2(x+3)} dx$

38. Evaluate $\int \frac{\sin(x-a)}{\sin(x+a)} dx$

39. Evaluate $\int \frac{x^2}{(x^2+4)(x^2+9)} dx$

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

41. Evaluate $\int \frac{5x+3}{\sqrt{x^2+4x+10}} dx$

42. Evaluate $\int e^{2x} \left(\frac{1+\sin 2x}{1+\cos 2x} \right) dx$

43. Evaluate $\int \frac{1}{(x^2+1)(x^2+2)} dx$

44. Evaluate $\int \left[\log(\log x) + \frac{1}{(\log x)^2} \right] dx$

45. Evaluate $\int \frac{x+2}{\sqrt{(x-2)(x-3)}} dx$

46. Evaluate $\int \frac{1-x^2}{x(1-2x)} dx$

47. Evaluate $\int e^{2x} \left(\frac{\sin 4x-4}{1-\cos 4x} \right) dx$

48. Evaluate $\int \frac{(\sin x + \cos x)}{\sqrt{\sin 2x}} dx$

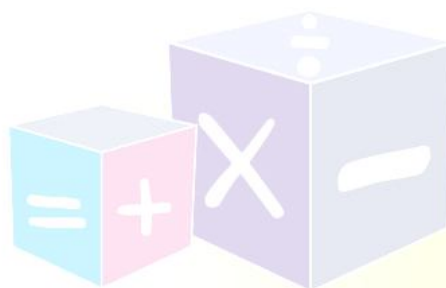
49. Find $\int \frac{\sqrt{x^2+1}(\log(x^2+1)-2\log x)}{x^4} dx$

50. Evaluate $\int \frac{x \sin^{-1} x}{\sqrt{1-x^2}} dx$

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

52. Evaluate $\int \frac{6x+7}{\sqrt{(x-5)(x-4)}} dx$

53. Evaluate $\int \frac{x^2+x+1}{(x+2)(x^2+1)} dx$



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54. Evaluate $\int \frac{\tan x + \tan^3 x}{1 + \tan^3 x} dx$

55. Evaluate $\int \frac{x^2}{1+x^3} dx$

56. Evaluate $\int \sin^3 x dx$

57. Evaluate $\int \sqrt{\frac{1-\cos 2x}{1+\cos 2x}} dx$

58. Evaluate $\int (3x-2)\sqrt{x^2+x+1} dx$

59. Evaluate $\int \frac{x+2}{\sqrt{x^2+5x+6}} dx$

60. Evaluate $\int \frac{x^2}{(x \sin x + \cos x)^2} dx$

61. Evaluate $\int e^{2x} \sin x dx$

62. Evaluate $\int \frac{3x+5}{\sqrt{x^2-8x+7}} dx$

63. Evaluate $\int \frac{x^2+4}{x^4+16} dx$

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

65. Evaluate $\int \frac{\sin x - \cos x}{\sqrt{\sin 2x}} dx$

66. Evaluate $\int \frac{2x}{(x^2+1)(x^2+3)} dx$

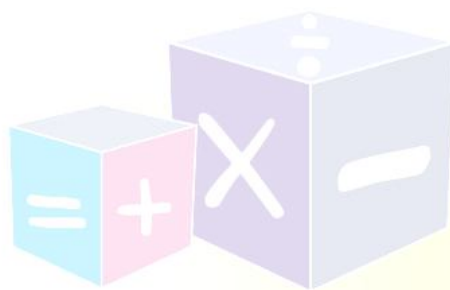
67. Evaluate $\int \frac{1}{\sin^4 x + \sin^2 x \cos^2 x + \cos^4 x} dx$

68. Evaluate $\int (\sqrt{\cot x} + \sqrt{\tan x}) dx$

69. Evaluate $\int \frac{1}{\cos^4 x + \sin^4 x} dx$

70. Find $\int \frac{x^2}{(x^2+1)(x^2+4)} dx$

71. Find $\int \frac{\sin^{-1} \sqrt{x} - \cos^{-1} \sqrt{x}}{\sin^{-1} \sqrt{x} + \cos^{-1} \sqrt{x}} dx, x \in [0,1]$



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72. Find $\int \frac{x^2 + x + 1}{(x+1)^2 (x+2)} dx$

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

74. Evaluate $\int \frac{2x+5}{\sqrt{7-6x-x^2}} dx$

75. Evaluate $\int \frac{1}{\sqrt{5-4x-2x^2}} dx$

76. Evaluate $\int \frac{e^x}{\sqrt{5-4e^x-e^{2x}}} dx$

77. Evaluate $\int \frac{x+3}{x^2-2x-5} dx$

78. Evaluate $\int x \cdot \sin^{-1} x dx$

79. Evaluate $\int x \log |(x+1)| dx$

80. Evaluate $\int (3x-2)\sqrt{x^2+x+1} dx$

81. Find $\int (x+3)\sqrt{3-4x-x^2} dx$

82. Find $\int \frac{5x-2}{1+2x+3x^2} dx$

83. Find $\int \frac{x^2}{x^4+3x^2+2} dx$

84. Evaluate $\int \frac{x^2+1}{(x^2+4)(x^2+25)} dx$

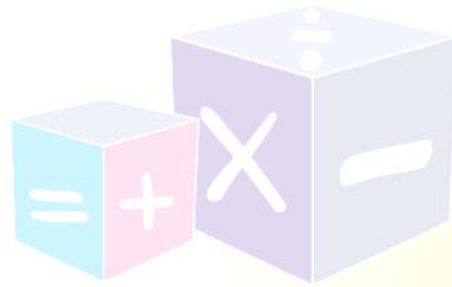
85. Evaluate $\int \frac{\cos 2x - \cos 2\alpha}{\cos x - \cos \alpha} dx$

86. Evaluate $\int \frac{x+2}{\sqrt{x^2+2x+3}} dx$

87. Evaluate $\int \frac{1}{x(x^5+3)} dx$

88. Evaluate $\int \frac{2}{(1-x)(1+x^2)} dx$

89. Evaluate $\int \left(\frac{1+\sin x}{1+\cos x} \right) e^x dx$



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90. Evaluate $\int \frac{x+2}{\sqrt{x^2+2x+3}} dx$

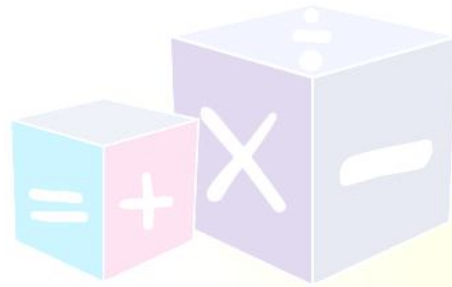
91. Evaluate $\int \frac{1}{x(x^3+8)} dx$

92. Evaluate $\int \sin x \sin 2x \sin 3x dx$

93. Evaluate $\int \frac{2}{(1-x)(1+x^2)} dx$

94. Evaluate $\int \left(\frac{1+\sin x}{1+\cos x} \right) e^x dx$

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