

Matemática II

Cuadernos de cátedra • Departamento de Ciencias Básica
Universidad Don Bosco • Luis Alonso Arenívar

$$\int (1 + \sqrt{x}) dx = \frac{1}{2} \int (x + x^{\frac{1}{2}}) dx = \frac{1}{2} \left(\frac{x^2}{2} + \frac{2}{3} x^{\frac{3}{2}} \right) + C$$

1. $\int 5x^6 dx = 5 \frac{x^7}{7} + C$

2. $\int (2\sqrt{x} - 3\sqrt[3]{x}) dx = \frac{4}{3} x^{\frac{3}{2}} - \frac{12}{5} x^{\frac{5}{3}} + C$

3. $\int (3\sqrt[3]{x} + 5e^x - \frac{2}{x}) dx = \int (3x^{\frac{1}{3}} + 5e^x - \frac{2}{x}) dx = 3 \int x^{\frac{1}{3}} dx + 5 \int e^x dx - 2 \int \frac{1}{x} dx = 3 \cdot \frac{x^{\frac{1}{3}+1}}{\frac{1}{3}+1} + 5e^x - 2 \ln|x| + C = \frac{9}{4} x^{\frac{4}{3}} + 5e^x - 2 \ln|x| + C$

4. $\int (x^2 + 9x + 3) dx = \frac{x^3}{3} + \frac{9x^2}{2} + 3x + C$

5. $\int (x + 11x + 2) dx = \frac{x^2}{2} + \frac{11x^2}{2} + 2x + C = \frac{x^2}{2} + \frac{12x^2}{2} + 2x + C = \frac{x^2}{2} + 6x^2 + 2x + C$

6. $\int (a^x + b^x + c) dx = \frac{a^x}{\ln a} + \frac{b^x}{\ln b} + cx + C$

7. $\int \frac{(x + \sqrt{x})(1 + \sqrt[3]{x})}{2} dx = \frac{1}{2} \int (x + x^{\frac{1}{2}} + x^{\frac{1}{2}} + x^{\frac{5}{6}}) dx = \frac{1}{2} \left(\frac{x^2}{2} + \frac{2}{3} x^{\frac{3}{2}} + \frac{2}{3} x^{\frac{3}{2}} + \frac{6}{11} x^{\frac{11}{6}} \right) + C$

8. $\int x^0 dx = \frac{x^1}{1} + C = x + C$

9. $\int \frac{1}{x^2} dx = \int x^{-2} dx = \frac{x^{-2+1}}{-2+1} + C = -\frac{1}{x} + C$

10. $\int \frac{1}{x^3} dx = \int x^{-3} dx = \frac{x^{-3+1}}{-3+1} + C = -\frac{1}{2x^2} + C$

11. $\int \frac{1}{x^4} dx = \int x^{-4} dx = \frac{x^{-4+1}}{-4+1} + C = -\frac{1}{3x^3} + C$

12. $\int \frac{1}{x^5} dx = \int x^{-5} dx = \frac{x^{-5+1}}{-5+1} + C = -\frac{1}{4x^4} + C$

13. $\int \frac{1}{x^6} dx = \int x^{-6} dx = \frac{x^{-6+1}}{-6+1} + C = -\frac{1}{5x^5} + C$

14. $\int \frac{1}{x^7} dx = \int x^{-7} dx = \frac{x^{-7+1}}{-7+1} + C = -\frac{1}{6x^6} + C$

15. $\int \frac{1}{x^8} dx = \int x^{-8} dx = \frac{x^{-8+1}}{-8+1} + C = -\frac{1}{7x^7} + C$

16. $\int \frac{1}{x^9} dx = \int x^{-9} dx = \frac{x^{-9+1}}{-9+1} + C = -\frac{1}{8x^8} + C$

17. $\int \frac{1}{x^{10}} dx = \int x^{-10} dx = \frac{x^{-10+1}}{-10+1} + C = -\frac{1}{9x^9} + C$

18. $\int \frac{1}{x^{11}} dx = \int x^{-11} dx = \frac{x^{-11+1}}{-11+1} + C = -\frac{1}{10x^{10}} + C$

19. $\int \frac{1}{x^{12}} dx = \int x^{-12} dx = \frac{x^{-12+1}}{-12+1} + C = -\frac{1}{11x^{11}} + C$

20. $\int \frac{1}{x^{13}} dx = \int x^{-13} dx = \frac{x^{-13+1}}{-13+1} + C = -\frac{1}{12x^{12}} + C$

21. $\int \frac{1}{x^{14}} dx = \int x^{-14} dx = \frac{x^{-14+1}}{-14+1} + C = -\frac{1}{13x^{13}} + C$

22. $\int \frac{1}{x^{15}} dx = \int x^{-15} dx = \frac{x^{-15+1}}{-15+1} + C = -\frac{1}{14x^{14}} + C$

23. $\int \frac{1}{x^{16}} dx = \int x^{-16} dx = \frac{x^{-16+1}}{-16+1} + C = -\frac{1}{15x^{15}} + C$

24. $\int \frac{1}{x^{17}} dx = \int x^{-17} dx = \frac{x^{-17+1}}{-17+1} + C = -\frac{1}{16x^{16}} + C$

25. $\int \frac{1}{x^{18}} dx = \int x^{-18} dx = \frac{x^{-18+1}}{-18+1} + C = -\frac{1}{17x^{17}} + C$

26. $\int \frac{1}{x^{19}} dx = \int x^{-19} dx = \frac{x^{-19+1}}{-19+1} + C = -\frac{1}{18x^{18}} + C$

27. $\int \frac{1}{x^{20}} dx = \int x^{-20} dx = \frac{x^{-20+1}}{-20+1} + C = -\frac{1}{19x^{19}} + C$

28. $\int \frac{1}{x^{21}} dx = \int x^{-21} dx = \frac{x^{-21+1}}{-21+1} + C = -\frac{1}{20x^{20}} + C$

29. $\int \frac{1}{x^{22}} dx = \int x^{-22} dx = \frac{x^{-22+1}}{-22+1} + C = -\frac{1}{21x^{21}} + C$

30. $\int \frac{1}{x^{23}} dx = \int x^{-23} dx = \frac{x^{-23+1}}{-23+1} + C = -\frac{1}{22x^{22}} + C$

31. $\int \frac{1}{x^{24}} dx = \int x^{-24} dx = \frac{x^{-24+1}}{-24+1} + C = -\frac{1}{23x^{23}} + C$

32. $\int \frac{1}{x^{25}} dx = \int x^{-25} dx = \frac{x^{-25+1}}{-25+1} + C = -\frac{1}{24x^{24}} + C$

33. $\int \frac{1}{x^{26}} dx = \int x^{-26} dx = \frac{x^{-26+1}}{-26+1} + C = -\frac{1}{25x^{25}} + C$

34. $\int \frac{1}{x^{27}} dx = \int x^{-27} dx = \frac{x^{-27+1}}{-27+1} + C = -\frac{1}{26x^{26}} + C$

35. $\int \frac{1}{x^{28}} dx = \int x^{-28} dx = \frac{x^{-28+1}}{-28+1} + C = -\frac{1}{27x^{27}} + C$

36. $\int \frac{1}{x^{29}} dx = \int x^{-29} dx = \frac{x^{-29+1}}{-29+1} + C = -\frac{1}{28x^{28}} + C$

37. $\int \frac{1}{x^{30}} dx = \int x^{-30} dx = \frac{x^{-30+1}}{-30+1} + C = -\frac{1}{29x^{29}} + C$

38. $\int \frac{1}{x^{31}} dx = \int x^{-31} dx = \frac{x^{-31+1}}{-31+1} + C = -\frac{1}{30x^{30}} + C$

39. $\int \frac{1}{x^{32}} dx = \int x^{-32} dx = \frac{x^{-32+1}}{-32+1} + C = -\frac{1}{31x^{31}} + C$

40. $\int \frac{1}{x^{33}} dx = \int x^{-33} dx = \frac{x^{-33+1}}{-33+1} + C = -\frac{1}{32x^{32}} + C$

41. $\int \frac{1}{x^{34}} dx = \int x^{-34} dx = \frac{x^{-34+1}}{-34+1} + C = -\frac{1}{33x^{33}} + C$

42. $\int \frac{1}{x^{35}} dx = \int x^{-35} dx = \frac{x^{-35+1}}{-35+1} + C = -\frac{1}{34x^{34}} + C$

43. $\int \frac{1}{x^{36}} dx = \int x^{-36} dx = \frac{x^{-36+1}}{-36+1} + C = -\frac{1}{35x^{35}} + C$

44. $\int \frac{1}{x^{37}} dx = \int x^{-37} dx = \frac{x^{-37+1}}{-37+1} + C = -\frac{1}{36x^{36}} + C$

45. $\int \frac{1}{x^{38}} dx = \int x^{-38} dx = \frac{x^{-38+1}}{-38+1} + C = -\frac{1}{37x^{37}} + C$

46. $\int \frac{1}{x^{39}} dx = \int x^{-39} dx = \frac{x^{-39+1}}{-39+1} + C = -\frac{1}{38x^{38}} + C$

47. $\int \frac{1}{x^{40}} dx = \int x^{-40} dx = \frac{x^{-40+1}}{-40+1} + C = -\frac{1}{39x^{39}} + C$

48. $\int \frac{1}{x^{41}} dx = \int x^{-41} dx = \frac{x^{-41+1}}{-41+1} + C = -\frac{1}{40x^{40}} + C$

49. $\int \frac{1}{x^{42}} dx = \int x^{-42} dx = \frac{x^{-42+1}}{-42+1} + C = -\frac{1}{41x^{41}} + C$

50. $\int \frac{1}{x^{43}} dx = \int x^{-43} dx = \frac{x^{-43+1}}{-43+1} + C = -\frac{1}{42x^{42}} + C$

51. $\int \frac{1}{x^{44}} dx = \int x^{-44} dx = \frac{x^{-44+1}}{-44+1} + C = -\frac{1}{43x^{43}} + C$

52. $\int \frac{1}{x^{45}} dx = \int x^{-45} dx = \frac{x^{-45+1}}{-45+1} + C = -\frac{1}{44x^{44}} + C$

53. $\int \frac{1}{x^{46}} dx = \int x^{-46} dx = \frac{x^{-46+1}}{-46+1} + C = -\frac{1}{45x^{45}} + C$

54. $\int \frac{1}{x^{47}} dx = \int x^{-47} dx = \frac{x^{-47+1}}{-47+1} + C = -\frac{1}{46x^{46}} + C$

55. $\int \frac{1}{x^{48}} dx = \int x^{-48} dx = \frac{x^{-48+1}}{-48+1} + C = -\frac{1}{47x^{47}} + C$

56. $\int \frac{1}{x^{49}} dx = \int x^{-49} dx = \frac{x^{-49+1}}{-49+1} + C = -\frac{1}{48x^{48}} + C$

57. $\int \frac{1}{x^{50}} dx = \int x^{-50} dx = \frac{x^{-50+1}}{-50+1} + C = -\frac{1}{49x^{49}} + C$

58. $\int \frac{1}{x^{51}} dx = \int x^{-51} dx = \frac{x^{-51+1}}{-51+1} + C = -\frac{1}{50x^{50}} + C$

59. $\int \frac{1}{x^{52}} dx = \int x^{-52} dx = \frac{x^{-52+1}}{-52+1} + C = -\frac{1}{51x^{51}} + C$

60. $\int \frac{1}{x^{53}} dx = \int x^{-53} dx = \frac{x^{-53+1}}{-53+1} + C = -\frac{1}{52x^{52}} + C$

61. $\int \frac{1}{x^{54}} dx = \int x^{-54} dx = \frac{x^{-54+1}}{-54+1} + C = -\frac{1}{53x^{53}} + C$

62. $\int \frac{1}{x^{55}} dx = \int x^{-55} dx = \frac{x^{-55+1}}{-55+1} + C = -\frac{1}{54x^{54}} + C$

63. $\int \frac{1}{x^{56}} dx = \int x^{-56} dx = \frac{x^{-56+1}}{-56+1} + C = -\frac{1}{55x^{55}} + C$

64. $\int \frac{1}{x^{57}} dx = \int x^{-57} dx = \frac{x^{-57+1}}{-57+1} + C = -\frac{1}{56x^{56}} + C$

65. $\int \frac{1}{x^{58}} dx = \int x^{-58} dx = \frac{x^{-58+1}}{-58+1} + C = -\frac{1}{57x^{57}} + C$

66. $\int \frac{1}{x^{59}} dx = \int x^{-59} dx = \frac{x^{-59+1}}{-59+1} + C = -\frac{1}{58x^{58}} + C$

67. $\int \frac{1}{x^{60}} dx = \int x^{-60} dx = \frac{x^{-60+1}}{-60+1} + C = -\frac{1}{59x^{59}} + C$

68. $\int \frac{1}{x^{61}} dx = \int x^{-61} dx = \frac{x^{-61+1}}{-61+1} + C = -\frac{1}{60x^{60}} + C$

69. $\int \frac{1}{x^{62}} dx = \int x^{-62} dx = \frac{x^{-62+1}}{-62+1} + C = -\frac{1}{61x^{61}} + C$

70. $\int \frac{1}{x^{63}} dx = \int x^{-63} dx = \frac{x^{-63+1}}{-63+1} + C = -\frac{1}{62x^{62}} + C$

71. $\int \frac{1}{x^{64}} dx = \int x^{-64} dx = \frac{x^{-64+1}}{-64+1} + C = -\frac{1}{63x^{63}} + C$

72. $\int \frac{1}{x^{65}} dx = \int x^{-65} dx = \frac{x^{-65+1}}{-65+1} + C = -\frac{1}{64x^{64}} + C$

73. $\int \frac{1}{x^{66}} dx = \int x^{-66} dx = \frac{x^{-66+1}}{-66+1} + C = -\frac{1}{65x^{65}} + C$

74. $\int \frac{1}{x^{67}} dx = \int x^{-67} dx = \frac{x^{-67+1}}{-67+1} + C = -\frac{1}{66x^{66}} + C$

75. $\int \frac{1}{x^{68}} dx = \int x^{-68} dx = \frac{x^{-68+1}}{-68+1} + C = -\frac{1}{67x^{67}} + C$

76. $\int \frac{1}{x^{69}} dx = \int x^{-69} dx = \frac{x^{-69+1}}{-69+1} + C = -\frac{1}{68x^{68}} + C$

77. $\int \frac{1}{x^{70}} dx = \int x^{-70} dx = \frac{x^{-70+1}}{-70+1} + C = -\frac{1}{69x^{69}} + C$

78. $\int \frac{1}{x^{71}} dx = \int x^{-71} dx = \frac{x^{-71+1}}{-71+1} + C = -\frac{1}{70x^{70}} + C$

79. $\int \frac{1}{x^{72}} dx = \int x^{-72} dx = \frac{x^{-72+1}}{-72+1} + C = -\frac{1}{71x^{71}} + C$

80. $\int \frac{1}{x^{73}} dx = \int x^{-73} dx = \frac{x^{-73+1}}{-73+1} + C = -\frac{1}{72x^{72}} + C$

81. $\int \frac{1}{x^{74}} dx = \int x^{-74} dx = \frac{x^{-74+1}}{-74+1} + C = -\frac{1}{73x^{73}} + C$

82. $\int \frac{1}{x^{75}} dx = \int x^{-75} dx = \frac{x^{-75+1}}{-75+1} + C = -\frac{1}{74x^{74}} + C$

83. $\int \frac{1}{x^{76}} dx = \int x^{-76} dx = \frac{x^{-76+1}}{-76+1} + C = -\frac{1}{75x^{75}} + C$

84. $\int \frac{1}{x^{77}} dx = \int x^{-77} dx = \frac{x^{-77+1}}{-77+1} + C = -\frac{1}{76x^{76}} + C$

85. $\int \frac{1}{x^{78}} dx = \int x^{-78} dx = \frac{x^{-78+1}}{-78+1} + C = -\frac{1}{77x^{77}} + C$

86. $\int \frac{1}{x^{79}} dx = \int x^{-79} dx = \frac{x^{-79+1}}{-79+1} + C = -\frac{1}{78x^{78}} + C$

87. $\int \frac{1}{x^{80}} dx = \int x^{-80} dx = \frac{x^{-80+1}}{-80+1} + C = -\frac{1}{79x^{79}} + C$

88. $\int \frac{1}{x^{81}} dx = \int x^{-81} dx = \frac{x^{-81+1}}{-81+1} + C = -\frac{1}{80x^{80}} + C$

89. $\int \frac{1}{x^{82}} dx = \int x^{-82} dx = \frac{x^{-82+1}}{-82+1} + C = -\frac{1}{81x^{81}} + C$

90. $\int \frac{1}{x^{83}} dx = \int x^{-83} dx = \frac{x^{-83+1}}{-83+1} + C = -\frac{1}{82x^{82}} + C$

91. $\int \frac{1}{x^{84}} dx = \int x^{-84} dx = \frac{x^{-84+1}}{-84+1} + C = -\frac{1}{83x^{83}} + C$

92. $\int \frac{1}{x^{85}} dx = \int x^{-85} dx = \frac{x^{-85+1}}{-85+1} + C = -\frac{1}{84x^{84}} + C$

93. $\int \frac{1}{x^{86}} dx = \int x^{-86} dx = \frac{x^{-86+1}}{-86+1} + C = -\frac{1}{85x^{85}} + C$

94. $\int \frac{1}{x^{87}} dx = \int x^{-87} dx = \frac{x^{-87+1}}{-87+1} + C = -\frac{1}{86x^{86}} + C$

95. $\int \frac{1}{x^{88}} dx = \int x^{-88} dx = \frac{x^{-88+1}}{-88+1} + C = -\frac{1}{87x^{87}} + C$

96. $\int \frac{1}{x^{89}} dx = \int x^{-89} dx = \frac{x^{-89+1}}{-89+1} + C = -\frac{1}{88x^{88}} + C$

97. $\int \frac{1}{x^{90}} dx = \int x^{-90} dx = \frac{x^{-90+1}}{-90+1} + C = -\frac{1}{89x^{89}} + C$

98. $\int \frac{1}{x^{91}} dx = \int x^{-91} dx = \frac{x^{-91+1}}{-91+1} + C = -\frac{1}{90x^{90}} + C$

99. $\int \frac{1}{x^{92}} dx = \int x^{-92} dx = \frac{x^{-92+1}}{-92+1} + C = -\frac{1}{91x^{91}} + C$

100. $\int \frac{1}{x^{93}} dx = \int x^{-93} dx = \frac{x^{-93+1}}{-93+1} + C = -\frac{1}{92x^{92}} + C$

101. $\int \frac{1}{x^{94}} dx = \int x^{-94} dx = \frac{x^{-94+1}}{-94+1} + C = -\frac{1}{93x^{93}} + C$

102. $\int \frac{1}{x^{95}} dx = \int x^{-95} dx = \frac{x^{-95+1}}{-95+1} + C = -\frac{1}{94x^{94}} + C$

103. $\int \frac{1}{x^{96}} dx = \int x^{-96} dx = \frac{x^{-96+1}}{-96+1} + C = -\frac{1}{95x^{95}} + C$

104. $\int \frac{1}{x^{97}} dx = \int x^{-97} dx = \frac{x^{-97+1}}{-97+1} + C = -\frac{1}{96x^{96}} + C$

105. $\int \frac{1}{x^{98}} dx = \int x^{-98} dx = \frac{x^{-98+1}}{-98+1} + C = -\frac{1}{97x^{97}} + C$

106. $\int \frac{1}{x^{99}} dx = \int x^{-99} dx = \frac{x^{-99+1}}{-99+1} + C = -\frac{1}{98x^{98}} + C$

107. $\int \frac{1}{x^{100}} dx = \int x^{-100} dx = \frac{x^{-100+1}}{-100+1} + C = -\frac{1}{99x^{99}} + C$



Editorial Universidad Don Bosco

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2011



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Ofrezco el presente texto de Matemática II a los alumnos y compañeros maestros en la confianza de que en sus páginas encontrarán el material apropiado para la enseñanza y estudio de esta asignatura.

Pudiera, de entrada, parecer ocioso de mi parte el haber dedicado cantidades considerables de horas y esfuerzo a la elaboración de este libro, cuando sobre el tema, y en español, existe abundante bibliografía.

No obstante, la experiencia de haber impartido numerosos cursos de Matemática II por muchos años, me han llevado al análisis de los aspectos didácticos de la materia y a la reflexión sobre los mismos. Esto ha hecho que fuese madurando en mí la idea de elaborar estos apuntes de Matemática II.

He aquí el resultado.

El contenido de este material está dividido en cinco unidades y cada unidad en varias secciones. Cada sección contiene un marco teórico de los temas a estudiar y una serie de ejemplos resueltos con cierto detalle, así como una serie de ejercicios propuestos, en la medida de que sean resueltos. Se ha procurado incluir al final las respuestas a los ejercicios impares.

La unidad I comienza con el proceso de la antiderivación, es decir, con el cálculo de primitivas. En la unidad II se estudia el cálculo integral, en ella se desarrolla en varias etapas los métodos de integración. En la unidad III se hace un estudio de la integral definida. El objeto de esta unidad es presentar al estudiante un concepto práctico de la integral definida como límite de sumas de Riemann, y describir la relación entre la derivada y la integral definida en el teorema fundamental del Cálculo. También hay una descripción de integración numérica y de las integrales impropias. La unidad IV contiene las aplicaciones de la integral: áreas, volúmenes de sólidos de revolución, longitud de arco, superficies de revolución; y las aplicaciones físicas tradicionales, trabajo, presión de un fluido y fuerza, a la que se añade, los momentos y centros de masa. El resto del material, unidad V, contiene curvas planas, parametrización, coordenadas polares y termina con un estudio de ecuaciones polares de las cónicas.

Termino haciendo una invitación a los estudiantes a que aprovechen al máximo estos apuntes y les agradezco el que lo estén utilizando. Expreso mi profundo aprecio a todas las personas que tanto me ayudaron y tuvieron confianza en la elaboración de estos apuntes.

Luis Alonso Arenivar

$(x + x^{\frac{4}{3}} + x^{\frac{1}{2}} + x^{\frac{5}{6}}) dx = \frac{1}{2} \left[\frac{x^2}{2} + \frac{3}{7} x^{\frac{7}{3}} + \frac{2}{3} x^{\frac{3}{2}} + \frac{6}{11} x^{\frac{11}{6}} \right] + C$
 1. $\int 5a^2 x^6 dx = 5a^2 \frac{x^7}{7} + C$
 $\int (3\sqrt[3]{x} + 5e^x - \frac{2}{x}) dx = \int (3x^{\frac{1}{3}} + 5e^x - 2\frac{1}{x}) dx = 3 \int x^{\frac{1}{3}} dx + 5 \int e^x dx - 2 \int \frac{1}{x} dx = \frac{1}{2} \left[\frac{x^2}{2} + \frac{3}{7} x^{\frac{7}{3}} + \frac{2}{3} x^{\frac{3}{2}} + \frac{6}{11} x^{\frac{11}{6}} \right] + C$
 3. $\int (2\sqrt{x} - 3\sqrt[3]{x}) dx = \frac{4}{3} x^{\frac{3}{2}} - \frac{3}{5} x^{\frac{5}{3}} + C$
 $\int (x + Dx + 2) dx = \frac{x^2}{2} + \frac{3x^2}{2} + 2x + C = 3 \frac{x^2+1}{3} + 5e^x - 2 \ln|x| + C = \frac{1}{4} x^2 + \frac{3}{14} x^{\frac{7}{3}} + \frac{1}{3} x^{\frac{3}{2}} + \frac{3}{11} x^{\frac{11}{6}} + C$
 5. $\int (4x^2 + 9x + 3) dx = 2x^3 + 4x^2 + 3x + C$
 $\int (x + \sqrt{x})(1 + \sqrt[3]{x}) dx = \frac{1}{2} \int (x + x^{\frac{4}{3}} + x^{\frac{1}{2}} + x^{\frac{5}{6}}) dx = \frac{1}{2} \left[\frac{x^2}{2} + \frac{3}{7} x^{\frac{7}{3}} + \frac{2}{3} x^{\frac{3}{2}} + \frac{6}{11} x^{\frac{11}{6}} \right] + C$
 2. $\int (ax^2 + bx + c) dx = \frac{ax^3}{3} + \frac{bx^2}{2} + cx + C$
 4. $\int (ax + b) dx = \frac{ax^2}{2} + bx + C$
 6. $\int (\cos t + \sin t - 2) dt = \sin t - \cos t - 2t + C$
 $\int \frac{1}{x^2} dx = -\frac{1}{x} + C$
 $\int \frac{1}{x^3} dx = -\frac{1}{2x^2} + C$
 $\int \frac{1}{x^5} dx = -\frac{1}{4x^4} + C$
 $\int \frac{1}{x^6} dx = -\frac{1}{5x^5} + C$
 $\int \frac{1}{x^7} dx = -\frac{1}{6x^6} + C$
 $\int \frac{1}{x^8} dx = -\frac{1}{7x^7} + C$
 $\int \frac{1}{x^9} dx = -\frac{1}{8x^8} + C$
 $\int \frac{1}{x^{10}} dx = -\frac{1}{9x^9} + C$
 $\int \frac{1}{x^{11}} dx = -\frac{1}{10x^{10}} + C$
 $\int \frac{1}{x^{12}} dx = -\frac{1}{11x^{11}} + C$
 $\int \frac{1}{x^{13}} dx = -\frac{1}{12x^{12}} + C$
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 $\int \frac{1}{x^{100}} dx = -\frac{1}{99x^{99}} + C$

