RESPUESTAS DE PRÁCTICA GENERAL DE MÉTODOS DE INTEGRACIÓN
LIBRO DE MATEM Págs. 320 - 323

1. $-ln|1 + e^x| + ln|e^x| + C$

2. $\frac{1}{2}\arctan(x^2) + C$

3. $x ln(x) - x + C$

4. $-x^2 e^{-x} - 2x e^{-x} - 2e^{-x} + C$

5. $-\frac{2}{3}(\cos(3x))^{1/2} + \frac{2}{15}(\cos(3x))^{5/2} + C$

6. $\frac{1}{4}(\sec(x))^4 + C$

7. $-\frac{1}{25} \cdot \frac{\sqrt{25-x^2}}{x} + C$

8. $arcsen(x - 1) + C$

9. $-\frac{1}{2}ln|x| + \frac{3}{2}ln|x - 4| + C$

10. $ln|x^2 + 2x + 2| - 7\arctan(x + 1) + C$

11. $\frac{4}{9}$

12. $\frac{x^4 ln(x)}{4} - \frac{x^4}{16} + C$

13. $\frac{1}{2}ln|x + 1| - \frac{1}{4}ln|x^2 + 1| + \frac{1}{2}\arctan(x) + C$

14. $\frac{sen^2(x)}{2} + ln|\cos(x)| + C$

15. $-\frac{1}{3}(50 + x^2)\sqrt{25 - x^2} + C$

16. $arcsen(x - 1) + C$

17. $\frac{\sqrt{2}}{2}\arctan\left(\sqrt{2}(x - 2)\right) + C$

18. $-\sqrt{4 - x^2} + 3 arcsen\left(\frac{x}{2}\right) + C$

19. $\frac{x^3}{3}\left(ln(x) - \frac{1}{3}\right) + C$

20. $\frac{1}{4}\left(\frac{3x}{2} + \frac{sen(4x)}{2} + \frac{sen(8x)}{16}\right) + C$

21. $ln\left|\sqrt{(x - 3)^2 + 1} + x - 3\right| + C$

22. $6 ln|x| - ln|x + 1| - \frac{9}{x+1} + C$

23. $\frac{1}{\sqrt{2}}\arctan\left(\frac{x}{\sqrt{2}}\right) - \frac{1}{2(x^2+2)} + C$

24. $-\frac{\sqrt{4-x^2}}{x} - arcsen\left(\frac{x}{2}\right) + C$

25. $\frac{16}{5}ln|x - 1| - \frac{11}{10}ln|x^2 + 4| + \frac{7}{5}\arctan\left(\frac{x}{2}\right) + C$

26. $-\frac{32(4)^{\frac{3}{2}}}{27} + \frac{2(4)^{\frac{5}{2}}}{45} + \frac{32(16)^{\frac{3}{2}}}{27} - \frac{2(16)^{\frac{5}{2}}}{45}$

27. $-\frac{1}{4}\ln|x + 1| + \frac{1}{8}\ln|x^2 + 2x + 5| + \frac{1}{2}\arctan\left(\frac{x+1}{2}\right) + C$

28. $\frac{1}{2}\arctan^2(x) + C$

29. $\frac{1}{2}\ln\left|\sqrt{4x^2 + 1} + 2x\right| + C$

30. $\frac{\pi^2}{32} - \frac{1}{4}$

31. $-\frac{\sqrt{9-x^2}}{x} - arcsen\left(\frac{x}{3}\right) + C$

32. $\frac{1}{5}\left(1 + \ln(x)\right)^5 + C$

33. $\frac{1}{6}\arctan\left(\frac{3x}{2}\right) + C$

34. $arcsen(e^x) + C$

35. $\frac{\pi^2}{72}$

36. $-\frac{1}{2}$

37. $\frac{\pi}{4}$

38. $\frac{81\pi}{8}$

39. $\frac{1}{2}\left(\ln(3) - \frac{2}{\sqrt{3}}\arctan\left(\frac{3}{\sqrt{3}}\right) + \frac{\pi}{3\sqrt{3}}\right)$

40. $\frac{1}{3}\left(-\ln(8) + \ln(4) + \ln(5)\right)$

41. $-\frac{1}{\sqrt{2}}\left(\ln\left|\tan\left(\frac{x}{2}\right) - 1 - \sqrt{2}\right| + \ln\left|\tan\left(\frac{x}{2}\right) - 1 + \sqrt{2}\right|\right) + C$

42. $\frac{1}{2}\arctan(x)(x^2 + 1) - \frac{x}{2} + C$

43. $-\frac{1}{5}\cot^5(x) - \frac{1}{7}\cot^7(x) + C$

44. $\frac{1}{3}\ln\left|x + \frac{1}{3} + \sqrt{\left(x + \frac{1}{3}\right)^2 - 1}\right| + C$

45. $x - \frac{1}{3}\ln|x + 1| + \frac{1}{6}\ln|x^2 - x + 1| - \frac{1}{\sqrt{3}}\arctan\left(\frac{2\left(x-\frac{1}{2}\right)}{\sqrt{3}}\right) + C$

46. $-\frac{1}{3}\ln|x + 1| + \frac{1}{6}\ln|x^2 - x + 1| - \frac{1}{\sqrt{3}}\arctan\left(\frac{2x-1}{\sqrt{3}}\right) + C$

47. $\ln\left|\frac{1+e^t}{\sqrt{1-e^{2t}}}\right| + C$

48. $\frac{1}{4\sqrt{5}}\arctan\left(\frac{x^4}{\sqrt{5}}\right) + C$

49. $-\ln\left|\frac{\sqrt{x^2+1}}{x} + \frac{1}{x}\right| + \sqrt{x^2 + 1} + C$

50. $x\cot(x) + \ln|sen(x)| + C$

51. $\frac{9}{2}\left(arcsen\left(\frac{x}{3}\right) - \frac{1}{9}x\sqrt{9 - x^2}\right) + C$

52. $\frac{2}{\sqrt{5}}\arctan\left(\frac{1}{\sqrt{5}}\right)$

53. $6\left(\frac{\sqrt[6]{x^5}}{5} - \frac{\sqrt[6]{x}}{3} - \frac{\sqrt[6]{x^2}}{2}\right) + 2\ln\left|\sqrt{x} + 1\right| + 6\left(\frac{-1}{3}\ln\left|\sqrt[6]{x} + 1\right| + \frac{1}{6}\ln\left|\sqrt[3]{x} - \sqrt[6]{x} + 1\right| + \frac{1}{\sqrt{3}}\arctan\left(\frac{2\sqrt[6]{x}-1}{\sqrt{3}}\right)\right) + C$

54. $\frac{3}{7}(x - 1)^{\frac{7}{3}} + \frac{3}{4}(x - 1)^{\frac{4}{3}} + C$

55. $\frac{1}{2}\left(\frac{1}{5}\tan^5(2t) + \frac{1}{3}\tan^3(2t)\right) + C$

56. $\ln|x - 2| + C$

57. $-\ln|\tan(t)| - \frac{1}{\tan(t)} + \ln|\tan(t) + 1| + C$

58. $\frac{25}{2}\left(\arcsen\left(\frac{x}{5}\right) - \frac{1}{25}x\sqrt{25 - x^2}\right) + C$

59. $\ln|x| - \frac{2}{\sqrt{3}}\arctan\left(\frac{2\left(x + \frac{1}{2}\right)}{\sqrt{3}}\right) + C$

60. $-2\left(\frac{1}{\tan\left(\frac{x}{2}\right) - 1} + \frac{x}{2}\right) + C$

61. $e^x(2x + 1) + C$

62. $\frac{38}{15}$

63. $\ln\left|\frac{\sqrt{(x+2)^2+4} + x + 2}{2}\right| + C$

64. $-\ln|x + 1| + \ln|x^2 - 4x + 7| + \frac{5}{\sqrt{3}}\arctan\left(\frac{x-2}{\sqrt{3}}\right) + C$

65. $-\frac{1}{4}\ln\left|3\tan\left(\frac{x}{2}\right) - 1\right| + \frac{1}{4}\ln\left|\tan\left(\frac{x}{2}\right) - 3\right| + C$

66. $\frac{1}{3}(\ln|2e^x - 1| - \ln|e^x + 1|) + C$

67. $\frac{x^3}{3} + 2(\sen(x) - x\cos(x)) + \frac{1}{2}(x - \sen(x)\cos(x)) + C$

68. $\frac{86}{3}$

69. $\frac{1}{8}$

70. $\sqrt{1 + 2x} + 3 - 3\ln|\sqrt{1 + 2x} + 3| + C$

71. $\frac{1}{3}(x^3\sen(x^3) + \cos(x^3)) + C$

72. $2e^{\sen(x)}(\sen(x) - 1) + C$

73. $\frac{1}{2}\left(x + \frac{\sen(2x)}{2}\right) + C$

74. $\frac{\sqrt{2}}{5}\ln\left|\frac{\sqrt{2} + \sqrt{2 - x^{10}}}{x^5}\right| + C$

75. $\frac{1}{x} - \frac{1}{2}\ln|x + 1| + \frac{1}{2}\ln|x - 1| + C$

76. $6u + 6\left(\frac{1}{3}\ln|u - 1| - \frac{1}{6}\ln|u^2 + u + 1| - \frac{1}{\sqrt{3}}\arctan\left(\frac{2\left(u + \frac{1}{2}\right)}{\sqrt{3}}\right)\right) + C$

77. $\frac{1}{5}(\cos(x))^{-5} - \frac{1}{3}(\cos(x))^{-3} + C$

78. $\frac{x^3}{3} + \frac{3x^2}{2} + 19x - \frac{1}{10}\ln|x| - \frac{31}{14}\ln|x + 2| + \frac{3126}{35}\ln|x - 5| + C$

79. $2\left(\arcsen\left(\sqrt{\frac{1+x}{2}}\right) + \frac{1}{2}\sqrt{1 + x}\sqrt{2 - (1 + x)}\right) + C$

80. $e^{e^x} + C$

81. $e^x + 1 - \ln|e^x + 1| + C$

82. $\frac{3}{4}x^{\frac{4}{3}} - \frac{6}{11}x^{\frac{11}{6}} + C$

83. $-\ln|\sqrt{1 - x^2} + 1| + C$

84. $-\frac{1}{2}\ln|e^x + 1| + \frac{1}{2}\ln|e^x - 1| + C$

85. $2\left(\ln\left|\tan\left(\frac{x}{2}\right)\right| - \frac{1}{2}\ln\left|1 + \left(\tan\left(\frac{x}{2}\right)\right)^2\right|\right) + C$

86. $\frac{1}{2}\ln^2\sqrt{3}$

87. $3ln\left|\sqrt{x+1}+3\right| - ln\left|\sqrt{x+1}+1\right| + C$

88. $ln|e^x| - 2ln|1-e^x| + C$

89. $x - ln|x| + x^{-1} + 2ln|x-1| + C$

90. $\frac{1}{4}\arctan\left(\frac{x^5}{4}\right) + C$

91. $\frac{1}{2}ln|x^2 - 2x + 2| - 4\arctan(x-1) + C$

92. $2\left(-\frac{x}{2} - \sqrt{x}\right) + \frac{1}{1-2\sqrt{x}} + C$

93. $-2\sqrt[4]{5-x}^2 - 4\sqrt[4]{5-x} + 4ln\left|\sqrt[4]{5-x}+1\right| + C$

94. $\frac{5}{2}ln\left|\sqrt{x^4+1}+x^2\right| + C$

95. $\frac{1}{3}x\tan(3x) - ln|\sec(3x)| + C$

96. $\frac{1}{2}\arctan\left(\frac{e^x-3}{2}\right) + C$

97. $-\frac{1}{4}ln|e^x| + \frac{1}{2e^x} + \frac{1}{4}ln|e^x-2| + C$

98. $\frac{4}{3}\left(\sqrt{x}+1\right)^{\frac{3}{2}} - 2\left(\sqrt{x}+1\right)^{\frac{1}{2}} + C$

99. $3\left(\frac{1}{2}\sqrt[3]{x-2}^2 - \sqrt[3]{x-2} + ln\left|\sqrt[3]{x-2}+1\right|\right) + C$

100. $\frac{1}{2}\left(-\frac{x^2e^{x^2}}{1+x^2} + e^{x^2}\right) + C$