SOLUCIONES A LAS INTEGRALES

1. $\frac{x^4}{4} + c$
2. $\frac{x^4}{12} + c$
3. $\frac{x^5}{30} + c$
4. $\frac{x^4}{4} + 3x + c$
5. $\frac{x^3}{3} + x^2 - \ln|x| + c$
6. $\frac{x^3}{3} + \frac{x^2}{2} + \ln|x| + c$
7. $-\frac{1}{x} + c$
8. $-\frac{1}{4x^4} + c$
9. $-\frac{1}{x} + \frac{1}{2x^4} - \frac{3}{5x^5} + c$
10. $\sqrt[3]{x^4} + c$
11. $\frac{4\sqrt[4]{x^3}}{3} + c$
12. $2\sqrt[3]{x^4} + 2\sqrt{x^3} + c$
13. $\frac{6}{11}\sqrt[6]{x^{11}} + \frac{3}{4}\sqrt[3]{x^4} + c$
14. $\frac{x^3}{3} + 2\cos x + 8\ sen\, x + c$
15. $e^x + \ln|x| + c$
16. $\frac{-2}{\sqrt{x}} + c$
17. $x + \ln|x| - \frac{3}{x} - \frac{3}{2x^2} + c$
18. $tg\, x + sen\, x + \frac{x^2}{2} + c$
19. $tg\, x - x + c$
20. $\frac{2\sqrt{x^3}}{3} + 2\sqrt{x} + c$
21. $-cotg\, x - tg\, x + c$
22. $e^x + \ln|x| + c$
23. $\frac{15^x}{\ln 15} + c$
24. $arcsen\, x - 3\, arctg\, x + c$
25. $tg\, x - cotg\, x + c$
26. $-2\ cotg\, x + \cos x + c$
27. $\frac{1}{3}\ln|3x + 2| + c$
28. $-\ln|3 - x| + c$
29. $\frac{1}{2}\ln|2 + x^2| + c$
30. $\frac{-1}{(x+1)^2} + c$
31. $\frac{1}{3}\ln|1 + x^3| + c$
32. $\ln|3 + sen^2 x| + c$
33. $\sqrt{x^2 - 6x + 1} + c$
34. $\frac{2\sqrt{(2+e^x)^3}}{3} + c1$
35. $\frac{\ln^2 x}{2} + c$
36. $\frac{2\sqrt{(x^3+1)^3}}{9} + c$
37. $-\frac{1}{5}\cos 5x + c$
38. $3\ sen\ x^2 + c$
39. $arctg\,(sen\, x) + c$
40. $\text{arc}\ sen\,(tg\, x) + c$
41. $\frac{e^{x^5}}{5} + c$
42. $\text{arc}\ tg\ x^4 + c$

43. $\frac{2^x}{\ln 2} + c$

44. $\frac{1}{3} \operatorname{arc}tg \frac{x}{3} + c$

45. $\frac{e^{7x}}{7} + c$

46. $e^x - e^{-x} + c$

47. $2e^{\sqrt{x}} + c$

48. $-e^{-sen\, x} + c$

49. $\operatorname{arc}sen\left(\frac{x}{5}\right) + c$

50. $\frac{1}{3\sqrt{2}} \operatorname{arc}tg\left(\frac{\sqrt{2}\, x}{3}\right) + c$

51. $\frac{(2x+5)^{10}}{20} + c$

52. $\frac{(\operatorname{arc}tg\, x)^4}{4} + c$

53. $\frac{sen^6 x}{6} + c$

54. $3\sqrt[3]{sen\, x} + c$

55. $\ln\left|\ln|x|\right| + c$

56. $2\, sen\sqrt{x} + c$

57. $\frac{e^{2x}}{2} + 2x - \frac{e^{-2x}}{2} + c$

58. $\frac{(\operatorname{arc}\cos x)^2}{2} + c$

59. $\ln\left|5 + x \ln x\right| + c$

60. $\frac{tg^3 x}{3} + \frac{tg^2 x}{2} + c$

61. $\frac{-2\sqrt{(\cos x)^3}}{3} + c$

62. $e^{e^x} + c$

63. $sen\, e^x + c$

64. $\operatorname{arc}tg\ (x+1) + c$

65. $-2\sqrt{\cos x} + \frac{2\sqrt{(\cos x)^5}}{5} + c$

66. $-\cos(\ln x) + c$

67. $\frac{1}{3\sqrt{2}} \operatorname{arc}tg\left(\frac{x^3}{\sqrt{2}}\right) + c$

68. $\operatorname{arc}sen(\ln x) + c$

69. $\frac{4\sqrt{(3+\sqrt{x})^3}}{3} + c$

70. $-\frac{1}{2\, sen^2 x} - \ln\left|\, sen\, x\,\right| + c$

71. $-\frac{1}{4} e^{-x^4} + c$

72. $-\frac{1}{e^x - 1} + c$

73. $\frac{1}{2} \operatorname{arc}sen\, x^2 + c$

74. $\frac{1}{3}\sqrt{(1+x^2)^3} + c$

75. $-\frac{\ln^2(\cos x)}{2} + c$

76. $\frac{\ln^2(\ln x)}{2} + c$

77. $\frac{1}{2} e^{2\, tg\, x} + c$

78. $\frac{1}{\cos x} + c$

79. $-\sqrt{2 - \cos 2x} + c$

80. $-\frac{\cos^3 x}{3} + \frac{\cos^5 x}{5} + c$

81. $e^{-sen\, x} + c$

82. $-x \cos x + sen\, x + c$

83. $\frac{x\ sen\, 3x}{3} + \frac{\cos 3x}{9} + c$

84. $\frac{x^3 \ln x}{3} - \frac{x^3}{9} + c$

85. $x^3 e^x - 3x^2 e^x + 6x e^x + 6 e^x + c$

86. $\frac{x^2 e^{3x}}{3} - \frac{2}{9} x e^{3x} + \frac{2}{27} e^{3x} + c$

87. $x e^{x} - e^{x} + c$

88. $x \operatorname{arc}sen\, x + \sqrt{1-x^{2}} + c$

89. $\dfrac{x\sqrt{(1+2x)^{3}}}{3} - \dfrac{1}{15}\sqrt{(1+2x)^{5}} + c$

90. $\dfrac{x^{2}\ \operatorname{arc}tg\, x}{2} - \dfrac{x}{2} + \dfrac{\operatorname{arc}tg\, x}{2} + c$

91. $-x^{2}\cos x + 2x\ sen\, x + 2\cos x + c$

92. $x\,(\ln x)^{2} - 2x\ln x + 2x + c$

93. $2\sqrt{x}\ e^{\sqrt{x}} - 2e^{\sqrt{x}} + c$

94. $\dfrac{2\sqrt{x^{3}}\ln x}{3} - \dfrac{4\sqrt{x^{3}}}{9} + c$

95. $x\ \operatorname{arc}tg\, x - \dfrac{1}{2}\ln\left|1+x^{2}\right| + c$

96. $x^{2}\ sen\, x + 2x\cos x - 2\ sen\, x + c$

97. $2x\sqrt{1+x} - \dfrac{4\sqrt{(1+x)^{3}}}{3} + c$

98. $\dfrac{x\ sen(\ln x) - x\cos(\ln x)}{2} + c$

99. $2x\ tg\, x + 2\ln\left|\cos x\right| + c$

100. $2\sqrt{x}\ln x - 4\sqrt{x} + c$

101. $-e^{-x}\,(x^{2}-x) - e^{-x}\,(2x-1) - 2e^{-x} + c$

102. $x^{2}\ \dfrac{e^{x^{2}}}{2} - \dfrac{e^{x^{2}}}{2} + c$

103. $x\ln x - x + c$

104. $\dfrac{e^{x}\cos x + e^{x}\ sen\, x}{2} + c$

105. $\dfrac{e^{x}\ sen\, x - e^{x}\cos x}{2} + c$

106. $-\dfrac{x\ e^{-3x}}{3} - \dfrac{e^{-3x}}{9} + c$

107. $x\ tg\, x + \ln\left|\cos x\right| + c$

108. $x\ sen\, x + \cos x + c$

109. $-\dfrac{\ln x}{2x^{2}} - \dfrac{1}{4x^{2}} + c$

110. $-x^{2}\cos x + 2x\ sen\, x + 2\cos x + c$

111. $\dfrac{e^{-3x}\ sen\, x}{10} - \dfrac{3e^{-3x}\cos x}{10} + c$

112. $\dfrac{x^{2}}{2}(\ln x)^{2} - \dfrac{x^{2}}{2}\ln x + \dfrac{x^{2}}{4} + c$

113. $\dfrac{x^{4}}{4}\ln\left|x\right| - \dfrac{x^{4}}{16} + c$

114. $\ln\left|x\right| .\ \ln(\ln\left|x\right|) - \ln\left|x\right| + c$

115. $-2x\sqrt{1-x} - \dfrac{4\sqrt{(1-x)^{3}}}{3} + c$

116. $-(x-3)\cos x + sen\, x + c$

117. $x\ln\left|\ x + \sqrt{1+x^{2}}\ \right| - \sqrt{1+x^{2}} + c$

118. $-\sqrt{1-x^{2}}\ arcsen\, x + x + c$

119. $\dfrac{x^{2}}{2}\ arcsen\, x^{2} + \dfrac{1}{2}\sqrt{1-x^{4}} + c$

120. $\dfrac{2}{3}\sqrt{x^{3}}\,(\ln x)^{2} - \dfrac{8}{9}\sqrt{x^{3}}\,(\ln x) + \dfrac{16}{27}\sqrt{x^{3}} + c$

121. $2x - 7\ln\left|\ x+2\right| + c$

122. $\dfrac{1}{4}\ln\left|\dfrac{x-2}{x+2}\right| + c$

123. $\dfrac{4}{5}\ln\left|\ x+3\right| + \dfrac{1}{5}\ln\left|\ x-2\right| + c$

124. $2\ln\left|\ x+2\right| - 2\ln\left|\ x+3\right| + c$

125. $\ln\left|\ x\right| + \ln\left|\ x-1\right| - \dfrac{2}{x-1} + c$

126. $\dfrac{1}{2}\ln\left|\ x\right| - \dfrac{1}{2}\ln\left|\ x+2\right| + c$

127. $x + \ln\left|\ x-2\right| - 2\ln\left|\ x+3\right| + c$

128. $\dfrac{x^{2}}{2} - x - \ln\left|\ x\right| + 2\ln\left|\ x+1\right| + c$

129. $x - \ln|x+1| + \ln|x-1| + c$

130. $\ln\left|\frac{x+1}{x}\right| - \frac{1}{x} + c$

131. $\frac{1}{6}\ln\left|\frac{x-3}{x+3}\right| + c$

132. $\frac{1}{4}\ln\left|\frac{x+1}{x-1}\right| - \frac{1/2}{x-1} + c$

133. $-3\ln|x| + 2\ln|x-1| + \ln|x+2| + c$

134. $\ln|x| - \frac{1}{x-1} + c$

135. $x^2 - \ln|x+1| + c$

136. $\ln|x+1| + \ln|x-2| + \frac{2}{x-2} + c$

137. $\frac{1}{2}\ln|x+3| + \frac{3}{2}\ln|x-1| + c$

138. $\ln|x+1| - \frac{3}{x-2} - 2\ln|x+2| + c$

139. $-\ln|x| - \frac{1}{x} + \ln|x+1| + c$

140. $-\frac{7}{3(x-2)} - \frac{2}{3(x+1)} + c$

141. $\frac{x^3}{3} + \frac{x^2}{2} + 4x + \ln\left|\frac{x^2(x-2)^5}{(x+2)^3}\right| + c$

142. $x - 2\,arctg\,x + c$

143. $2\ln\left|\frac{x-2}{x}\right| + \frac{3}{x-2} + c$

144. $-3\ln|x-1| + \frac{2}{x-1} + 3\ln|x-2| + c$

145. $\ln|x| - \frac{1}{2}\ln|x^2+x+1| - \frac{\sqrt{3}}{3}\,arctg\left(\frac{2x+1}{\sqrt{3}}\right) + c$

146. $\frac{1}{2}\,arctg\left(\frac{x}{2}\right) + c$

147. $\frac{1}{2}\,arctg\left(\frac{x-1}{2}\right) + c$

148. $\ln\left|\frac{x-1}{\sqrt{x^2+x+1}}\right| - \sqrt{3}\,arctg\left(\frac{2x+1}{\sqrt{3}}\right) + c$

149. $\ln|x| + 2\ln|x^2-6x+25| + 4\,arctg\frac{x-3}{4} + c$

150. $\frac{1}{x-1} + arctg\,x + c$

151. $\frac{x^4}{4} + x^3 + x^2 - 3x + c$

152. $e^x + 3x + c$

153. $-e^{-x} + \frac{3\sqrt[3]{x^4}}{4} - \frac{3}{4}\sqrt[3]{(2x)^2} - \frac{1}{x} + c$

154. $x^2e^x - 2xe^x + 2e^x + c$

155. $\frac{-1}{9(3x+1)^3} + c$

156. $\ln\left|5 + 3x + \frac{2}{3}x^3\right| + c$

157. $\frac{-1}{2(x^2+x)^2} + c$

158. $x\,tg\,x + \ln|\cos x| + c$

159. $5\,arctg\,e^x + c$

160. $\frac{1}{2}\,tg\,x^2 + c$

161. $\frac{1}{2}\left(x - \frac{sen\,2x}{2}\right) + c$

162. $tg\,x - x + c$

163. $2x + tg\,x + c$

164. $arcsen\,x - \sqrt{1-x^2} + c$

165. $\frac{\sqrt{(2+x^2)^3}}{3} + c$

166. $10\sqrt{1 + sen\,x} + c$

167. $\frac{e^{2x}}{2} + x - e^{-x} + c$

168. $arc\,\mathrm{sen}\left(\frac{x}{3}\right) + c$

169. $3x^2\sqrt{x^2+1} - 2\sqrt{(x^2+1)^3} + c$

170. $\left(\frac{5}{3}\right)^x \cdot \frac{1}{\ln(5/3)} + c$

171. $-\frac{\ln x}{x} - \frac{1}{x} + c$

172. $-2\,cotg(x^3) + tg(4x) + c\,2$

173. $-\frac{1}{2}e^{-2x-1} + c$

174. $\frac{1}{2}arctg\left(\frac{x}{2}\right) + c$

175. $\frac{1}{3}\ln\left|x^3+4\right| + c$

176. $\frac{1}{3}arctg(e^{3x}) + c$

177. $\frac{1}{2}e^{-5x^2} + c$

178. $\frac{tg^2 x}{2} + c$

179. $-\ln\left|\cos x\right| + c$

180. $\frac{sen\,5x}{5} + \frac{3\cos 2x}{2} + c$

181. $\frac{1}{2}arctg(x^2+3) + c$

182. $\frac{\ln^2\left|x\right|}{2} + c$

183. $\frac{x^2}{2} - \frac{e^x\,cosx + e^x\,senx}{2} + c$

184. $\frac{2}{1-tg(x/2)} + c$

185. $e^{sen\,x} + c$

186. $\frac{sen^4 x}{4} - \frac{sen^6 x}{6} + c$

187. $\frac{1}{2}sen(1+x^2) + c$

188. $2\ln\left|1+\sqrt{x}\right| + c$

189. $2\ln\left|x-3\right| - \ln\left|x+3\right| + c$

190. $5\ln\left|2+e^x\right| + c$

191. $\frac{2\sqrt[6]{x^9}}{3} + \frac{3\sqrt[3]{x^4}}{4} + \frac{6\sqrt[6]{x^7}}{7} + c$

192. $tg(x) + c$

193. $x - \sqrt{x} - 2\ln\left|\sqrt{x}+1\right| + c$

194. $\frac{tg^4 x}{4} + c$

195. $e^{tg\,x} + c$

196. $\frac{1}{5}\ln\left|9+5x^2\right| + c$

197. $\frac{2x^3}{3} - \frac{x^2}{2} + 4x - 3\ln\left|x+1\right| + c$

198. $\ln\left|sen\,x\right| - 2\ln\left|\cos x\right| + c$

199. $\frac{-1}{2\,sen^2 x} + c$

200. $arcsen(x^2) + c$