2º BCN Cálculo de integrales

1. $\int \frac{x+1}{x}\,dx$
2. $\int \frac{1+2x}{1+x^2}\,dx$
3. $\int \frac{x+1}{\sqrt{x}}\,dx$
4. $\int x\left(x^2+1\right)^8\,dx$
5. $\int \frac{x}{x^2+1}\,dx$
6. $\int \cos 5x\,dx$
7. $\int sen\,5x\,dx$
8. $\int sen(3x+2)\,dx$
9. $\int 2x\,e^{x^2}\,dx$
10. $\int x\,a^{x^2}\,dx$
11. $\int \frac{x^2}{x^3+2}\,dx$
12. $\int x^2\,sen\,x^3\,dx$
13. $\int \frac{2x}{1+x^4}\,dx$
14. $\int \frac{e^x}{1+e^x}\,dx$
15. $\int \frac{x^2}{x^3-1}\,dx$
16. $\int \frac{2x+1}{x^2+x}\,dx$
17. $\int \frac{sen\,2x}{1+\cos^2 x}\,dx$
18. $\int x\,e^x\,dx$
19. $\int x^2\,e^x\,dx$
20. $\int x\cos x\,dx$
21. $\int x\,senx\,dx$
22. $\int x^2\cos x\,dx$
23. $\int \ln x\,dx$
24. $\int x\ln x\,dx$
25. $\int arcsen\,x\,dx$
26. $\int e^x\cos x\,dx$
27. $\int x^3\,e^{x^2}\,dx$
28. $\int \left(3x^2-1\right)^{240} x\,dx$
29. $\int e^{sen\,x}\cos x\,dx$
30. $\int e^{-5x}\,dx$
31. $\int sen^2 x\cos x\,dx$
32. $\int x\left(2x^2-7\right)^{99}\,dx$
33. $\int 5x\sqrt{x^2+7}\,dx$
34. $\int \frac{(x^2-1)^2}{\sqrt{x}}\,dx$
35. $\int \frac{4x\,dx}{\sqrt[3]{8-x^2}}$
36. $\int \frac{x^2-\sqrt{x}}{x}\,dx$
37. $\int (2x+1)\,e^{x^2+x+5}\,dx$
38. $\int \frac{x\,dx}{1+(x^2+4)^2}$
39. $\int \frac{2x\,dx}{1+x^4}$
40. $\int x\,sen\,(x^2+4)\,dx$
41. $\int \frac{2x\,dx}{4+x^4}$
42. $\int \frac{x+3}{x^2+x-2}\,dx$
43. $\int \frac{x-1}{x^2-5x+6}\,dx$
44. $\int \frac{x^2+x}{x^2-x}\,dx$
45. $\int \frac{x^5-3x^2+4}{x-2}\,dx$
46. $\int \frac{x^2-6x+7}{(x-1)(x-2)(x-3)}\,dx$
47. $\int \frac{x+2}{x^2-x-2}\,dx$
48. $\int \frac{x+1}{x^2+2x+6}\,dx$
49. $\int \frac{3x^2-2\sqrt{x}}{5x}\,dx$
50. $\int x^2\,\ln x\,dx$
51. $\int (e^{3x}+e^{-2x}+e^x)\,dx$
52. $\int (x^2+x)\,e^x\,dx$
53. $\int \frac{5^x}{7^x}\,dx$
54. $\int 6x\,e^{x^2+2}\,dx$
55. $\int \cos^4 x\,senx\,dx$
56. $\int e^x\,sen\,e^x\,dx$
57. $\int sen5x\,sen7x\,dx$
58. $\int sen^2 x\,\cos^3 x\,dx$
59. $\int \frac{dx}{(3x+2)^5}$
60. $\int \frac{dx}{\sqrt{1-25x^2}}$
61. $\int \frac{e^x}{1+e^{2x}}\,dx$
62. $\int \cos^3 3x\,dx$
63. $\int x\sqrt{1+x}\,dx$
64. $\int \frac{\sqrt{x}-1}{6(\sqrt[3]{x}+1)}\,dx$
65. $\int \cos^2 x\,dx$
66. $\int \cos^4 x\,dx$

67. $\int \frac{dx}{\sqrt{25-16x^2}}$

68. $\int e^{3x}\, sen2x\, dx$

69. $\int \frac{\cos x\ dx}{1+sen^2 x}$

70. $\int \frac{sen3x}{\cos^2 3x}\, dx$

71. $\int e^{sen\,x}\cos x\, dx$

72. $\int arc\cos 2x\ dx$

73. $\int \frac{1+\ln\left(x^3\right)+(\ln x)^2}{x\ (1+\ln x)}\, dx$

74. $\int \frac{\sqrt{x+1}+1}{x+1}\, dx$

75. $\int \frac{1}{1+e^x}\, dx$

76. $\int \frac{dx}{x^2+2x+3}$

77. $\int \frac{x+3}{x^2+x+1}\, dx$

78. $\int \frac{\ln x}{x^2}\, dx$

79. $\int \frac{x^3}{x^2+1}\, dx$

80. $\int \frac{dx}{(1+x)\sqrt{x}}$

81. $\int \frac{dx}{\sqrt{9-(x-1)^2}}$

Soluciones:

1. $x+\ln x+C$
2. $arctg\,x+\ln\left|1+x^2\right|+C$
3. $\frac{2}{3}x\sqrt{x}+2\sqrt{x}+C$
4. $\frac{(x^2+1)^9}{18}+C$
5. $\frac{1}{2}\ln(x^2+1)+C$
6. $\frac{1}{5}sen5x+C$
7. $-\frac{1}{5}\cos 5x+C$
8. $-\frac{1}{3}sen(3x+2)+C$
9. $e^{x^2}+C$
10. $\frac{a^{x^2}}{2\ln a}+C$
11. $\frac{1}{3}\ln(x^3+2)+C$
12. $-\frac{1}{3}\cos x^3+C$
13. $arctg\,x^2+C$
14. $\ln(1+e^x)+C$
15. $\frac{1}{3}\ln\left|x^3-1\right|+C$
16. $\ln\left|x^2+x\right|+C$
17. $-\ln(1+\cos^2 x)+C$
18. xe^x-e^x+C
19. $(x^2-2x+2)\,e^x+C$
20. $x\,sen\,x+\cos x+C$
21. $-x\cos x+sen\,x+C$
22. $(x^2-2)\,senx+2x\cos x+C$
23. $x\ln|x|-x+C$
24. $\frac{x^2}{2}\cdot\left(\ln|x|-\frac{1}{2}\right)+C$
25. $x\,arcsen\,x+\sqrt{1-x^2}+C$
26. $\frac{e^x}{2}(\cos x+senx)+C$
27. $\frac{e^{x^2}}{2}(x^2-1)+C$
28. $\frac{(3x^2-1)^{241}}{1446}+C$
29. $e^{sen\,x}+C$
30. $-\frac{1}{5}e^{-5x}+C$
31. $\frac{sen^3 x}{3}+C$
32. $\frac{(2x^2-7)^{100}}{400}+C$
33. $\frac{5}{3}\sqrt{(x^2+7)^3}+C$
34. $\left(\frac{2}{9}x^4-\frac{4}{5}x^2+2\right)\sqrt{x}+C$
35. $-3\sqrt[3]{(8-x^2)^2}+C$
36. $\frac{x^2}{2}-2\sqrt{x}+C$
37. $e^{x^2+x+5}+C$
38. $\frac{1}{2}arctg(x^2+4)+C$
39. $arctg\,x^2+C$
40. $-\frac{1}{2}\cos(x^2+4)+C$
41. $\frac{1}{2}arctg\frac{x^2}{2}+C$
42. $\frac{1}{3}\ln\left|\frac{(x-1)^4}{x+2}\right|+C$
43. $\ln\left|\frac{(x-3)^2}{x-2}\right|+C$
44. $x+2\ln|x-1|+C$

45. $\frac{x^5}{5}+\frac{x^4}{2}+\frac{4x^3}{3}+\frac{5x^2}{2}+10x+24\ln|x-2|+C$

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

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

48. $\frac{1}{2}\ln\left(x^2+2x+6\right)+C$

49. $\frac{3}{10}x^2-\frac{4}{5}\sqrt{x}+C$

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

51. $\frac{e^{3x}}{3}-\frac{e^{-2x}}{2}+e^x+C$

52. $e^x\left(x^2-x+1\right)+C$

53. $\frac{5^x}{7^x(\ln 5-\ln 7)}+C$

54. $3e^{x^2+2}+C$

55. $-\frac{\cos^5 x}{5}+C$

56. $-\cos e^x+C$

57. $\frac{sen\,2x}{4}-\frac{sen\,12x}{24}+C=-\frac{7}{24}sen\,5x\cdot\cos 7x+\frac{5}{24}\cos 5x\cdot sen\,7x$

58. $\frac{sen^3 x}{3}-\frac{sen^5 x}{5}+C$

59. $-\frac{1}{12(3x+2)^4}+C$

60. $\frac{arcsen\,5x}{5}+C$

61. $arctg\,e^x+C$

62. $\frac{sen\,3x}{3}-\frac{sen^3 3x}{9}+C$

63. $2\sqrt{1+x}\left(\frac{(1+x)^2}{5}-\frac{1+x}{3}\right)+C$

64. $\frac{x\sqrt[6]{x}}{7}-\frac{\sqrt[6]{x^5}}{5}-\frac{\sqrt[3]{x^2}}{4}+\frac{\sqrt{x}}{3}+\frac{\sqrt[3]{x}}{2}-\sqrt[6]{x}-\frac{1}{2}\ln\left|\sqrt[3]{x}+1\right|+arctg\sqrt[6]{x}+C$

65. $\frac{sen\,x\cos x+x}{2}+C$

66. $\frac{sen\,x\cos^3 x}{4}+\frac{3\,sen\,x\cos x}{8}+\frac{3x}{8}+C$

67. $\frac{1}{4}\,arc\,sen\frac{4x}{5}+C$

68. $\frac{e^{3x}}{13}\left(3sen\,2x-2\cos 2x\right)+C$

69. $arc\,tg\left(sen\,x\right)+C$

70. $\frac{1}{3\cos 3x}+C$

71. $e^{sen\,x}+C$

72. $x\,arc\cos 2x-\frac{1}{2}\sqrt{1-4x^2}+C$

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

74. $2\sqrt{x+1}+2\ln\sqrt{x+1}+C$

75. $x-\ln\left(1+e^x\right)+C$

76. $\frac{\sqrt{2}}{2}\,arc\,tg\left(\frac{x+1}{\sqrt{2}}\right)+C$

77. $\frac{1}{2}\ln\left(x^2+x+1\right)+\frac{5\sqrt{3}}{12}\,arc\,tg\left(\frac{2x+1}{\sqrt{3}}\right)+C$

78. $-\frac{1+\ln x}{x}+C$

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

80. $2\,arc\,tg\sqrt{x}+C$

81. $arc\,tg\left(\frac{x-1}{3}\right)+C$