1. d/dx(x^n) = n x^(n-1)
2. d/dx(sin(x)) = cos(x)
3. d/dx(cos(x)) = -sin(x)
4. d/dx(tan(x)) = sec^2(x)
5. d/dx(cot(x)) = -csc^2(x)
6. d/dx(sec(x)) = sec(x)tan(x)
7. d/dx(csc(x)) = -csc(x)cot(x)
8. d/dx(e^x) = e^x
9. d/dx(a^x) = a^x ln(a)
10. d/dx(ln(x)) = 1/x
11. d/dx(log_a(x)) = 1/(xln(a))
12. d/dx(sqrt(x)) = 1/(2sqrt(x))
13. d/dx(abs(x)) = 1 if x > 0, -1 if x < 0
14. d/dx(sinh(x)) = cosh(x)
15. d/dx(cosh(x)) = sinh(x)
16. d/dx(tanh(x)) = sech^2(x)
17. d/dx(coth(x)) = -csch^2(x)
18. d/dx(sech(x)) = -sech(x)tanh(x)
19. d/dx(csch(x)) = -csch(x)coth(x)
20. d/dx(arcsin(x)) = 1/sqrt(1-x^2)
21. d/dx(arccos(x)) = -1/sqrt(1-x^2)
22. d/dx(arctan(x)) = 1/(1+x^2)
23. d/dx(arccot(x)) = -1/(1+x^2)
24. d/dx(arcsec(x)) = 1/|x|sqrt(x^2-1)
25. d/dx(arccsc(x)) = -1/|x|sqrt(x^2-1)
26. d/dx(sinh^(-1)(x)) = 1/sqrt(1+x^2)

27. d/dx(cosh^(-1)(x)) = 1/sqrt(x^2-1)
28. d/dx(tanh^(-1)(x)) = 1/(1-x^2)
29. d/dx(coth^(-1)(x)) = -1/(1-x^2)
30. d/dx(f(x) + g(x)) = f'(x) + g'(x)
31. d/dx(f(x)g(x)) = f'(x)g(x) + f(x)g'(x)
32. d/dx(f(x)/g(x)) = (f'(x)g(x) - f(x)g'(x))/g(x)^2
33. d/dx(f(g(x))) = f'(g(x))g'(x)
34. d/dx(x^3) = 3x^2
35. d/dx(3x^4) = 12x^3
36. d/dx(sin(2x)) = 2cos(2x)
37. d/dx(e^(3x)) = 3e^(3x)
38. d/dx(ln(5x)) = 1/(5x)
39. d/dx(sqrt(x+7)) = 1/(2sqrt(x+7))
40. d/dx(abs(2x-1)) = 2 if 2x > 1, -2 if 2x < 1
41. d/dx(sin^2(x)) = 2sin(x)cos(x)
42. d/dx(tan^2(x)) = 2tan(x)sec^2(x)
43. d/dx(sec^3(x)) = 3sec(x)sec^2(x)tan(x)
44. d/dx(csc^4(x)) = -4csc(x)csc^3(x)cot(x)
45. d/dx(e^(sin(x))) = e^(sin(x))cos(x)
46. d/dx(ln(cos(x))) = -tan(x)
47. d/dx(arcsin^2(x)) = (2/sqrt(1-x^2))arcsin(x)
48. d/dx(arccos^3(x)) = -3(1/sqrt(1-x^2))arccos^2(x)
49. d/dx(arctan^(-1)(x)) = -1/(1+x^2)
50. d/dx(sin(e^x)) = cos(e^x)e^x
51. d/dx(cos(ln(x))) = -sin(ln(x))(1/x)
52. d/dx(tan(arcsin(x))) = sec^2(arcsin(x))(1/sqrt(1-x^2))

53. d/dx(sec(arctan(x))) = sec(arctan(x))tan(arctan(x))(1/(1+x^2))
54. d/dx(csc(cosh(x))) = -csc(cosh(x))coth(cosh(x))sinh(x)
55. d/dx(x^sin(x)) = x^sin(x)(cos(ln(x)) + sin(x)/x)
56. d/dx(sqrt(cos(x))) = (-sin(x))/(2sqrt(cos(x)))
57. d/dx(abs(tan(x))) = sec^2(x) if tan(x) > 0, -sec^2(x) if tan(x) < 0
58. d/dx(sinh(sqrt(x))) = (cosh(sqrt(x)))/(2sqrt(x))
59. d/dx(cosh^(-1)(arcsin(x))) = 1/sqrt(1+arcsin^2(x))(1/sqrt(1-x^2))
60. d/dx(tanh(e^(2x))) = sech^2(e^(2x))2e^(2x)
61. d/dx(sin(x^2)) = 2xcos(x^2)
62. d/dx(cos(x^3)) = -3x^2sin(x^3)
63. d/dx(tan(sqrt(x))) = (sec^2(sqrt(x)))(1/(2sqrt(x)))
64. d/dx(sec(x+7)) = sec(x+7)tan(x+7)
65. d/dx(csc(2x-5)) = -2csc(2x-5)cot(2x-5)
66. d/dx(arcsin(cos(x))) = -(1/sqrt(1-cos^2(x)))sin(x)
67. d/dx(arccos(tan(x))) = 1/(sqrt(1+tan^2(x)))sec^2(x)
68. d/dx(arctan(csc(x))) = -(1/(1+csc^2(x)))csc(x)cot(x)
69. d/dx(sinh(arcsinh(x))) = (cosh(arcsinh(x)))(1/sqrt(1+x^2))
70. d/dx(cosh(arccosh(x))) = (sinh(arccosh(x)))(1/sqrt(x^2-1))
71. d/dx(tanh(arctanh(x))) = (1/(1-x^2))(sech^2(arctanh(x)))

72. d/dx(coth(arccoth(x))) = -(1/(1-x^2))(csch^2(arccoth(x)))
73. d/dx(f(x)+g(x)) = f'(x)+g'(x)
74. d/dx(5f(x)) = 5f'(x)
75. d/dx(2sin(x)) = 2cos(x)
76. d/dx(πx^2) = 2πx
77. d/dx(x/3) = 1/3
78. d/dx(cos(2x)/5) = -(2/5)sin(2x)
79. d/dx(ln(x^2)) = 2/x
80. d/dx(sqrt(cos(x))) = (-sin(x))/(2sqrt(cos(x)))
81. d/dx(tan^-1(x^3)) = 3x^2/(1+x^6)
82. d/dx(abs(cos(x))) = -sin(x) if cos(x) > 0, sin(x) if cos(x) < 0
83. d/dx(sec(e^(2x))) = 2sec(e^(2x))tan(e^(2x))e^(2x)
84. d/dx(csc(ln(|x|))) = -cot(ln(|x|))(1/|x|)
85. d/dx(sinh(arcsinh(x))) = (cosh(arcsinh(x)))(1/sqrt(1+x^2))
86. d/dx(cos(x+π/4)) = -sin(x+π/4)
87. d/dx(tan(x-π/2)) = sec^2(x-π/2)
88. d/dx(cot(2arcsin(x))) = -2(1-x^2)^(-1/2)
89. d/dx(sec(arccos(x))) = (x^2-1)^(-1/2)tan(arccos(x))
90. d/dx(csc(arctan(x)/3)) = -(1/3)csc(arctan(x)/3)cot(arctan(x)/3)
91. d/dx(x^(sin(x))) = x^(sin(x))(cos(ln(x))+sin(x)/x)
92. d/dx((2x+5)^3) = 3(2x+5)^2(2)
93. d/dx(ln(|cos(x)|)) = -tan(x)/|cos(x)|

94. d/dx(√(1+x^2)) = x/(√(1+x^2))
95. d/dx(arcsin(2x)) = (1/√(1-(2x)^2))(2)
96. d/dx(sin(x)cos(x)) = cos^2(x)-sin^2(x)
97. d/dx(sec(x)tan(x)) = sec(x)tan(x)(sec^2(x)+tan^2(x))
98. d/dx(csc(x)cot(x)) = -csc(x)cot(x)(csc^2(x)+cot^2(x))
99. d/dx(e^xsin(x)) = e^xsin(x)(cos(x)+sin(x))
100. d/dx(x!) = x! * (ln(x)+1)