Dylan's Dozen (or so) Derivatives for the Diligent Disciple

1. $f(x) = x^{\frac{1}{2}}$
2. $y = (2x)^{\frac{3}{2}}$
3. $f(x) = 3x^{\frac{2}{3}}$
4. $f(x) = (9x)^{\frac{1}{3}}$
5. $y = 2\sqrt{x}$
6. $y = -\sqrt[3]{x}$
7. $y = \sqrt{4x}$
8. $f(x) = \sqrt[5]{4x^4}$
9. $f(x) = -17(3x^3 - 4x^2 + 2)$
10. $f(x) = 3(4x^3 + \frac{2}{3x^2})$
11. $y = -\frac{5x^4 + 3x^3}{7}$
12. $f(x) = \frac{3x^2 - 2x - \frac{18}{x^3}}{2}$
13. $f(x) = 2x^2\sqrt{x}$
14. $y = -5x^5\sqrt{x}$
15. $y = 4x^2\sqrt{x} + 4\sqrt{x}$
16. $f(x) = (4x^2 - 4x)\sqrt{x}$
17. $f(x) = \frac{5}{x - 3}$
18. $f(x) = \frac{3}{x^2 + 3x}$
19. $y = -\frac{18}{5x^3 + 2x^2}$
20. $y = -\frac{4x}{2x^3 - 4x}$
21. $y = \frac{4x^3 + 2x^2 + 3x}{4x}$
22. $f(x) = -\frac{2x^2 + 4x - 7}{8x^3}$
23. $f(x) = -\frac{2x^2 + 13x + 12}{2x + 5}$
24. $y = \frac{28x^3 + 16x^2 - 21x - 12}{4x^2 - 3}$
25. $f(x) = \frac{1}{\sqrt{x}}$
26. $f(x) = -\frac{3}{x\sqrt{x}}$
27. $y = -\frac{1}{\sqrt{1 - x^2}}$
28. $f(x) = \frac{15}{\sqrt[3]{x^3 + 2x}}$
29. $f(x) = \frac{2}{4 + \sqrt{x}}$
30. $y = -\frac{1}{4 - 3\sqrt{x}}$
31. $y = \frac{1}{x\sqrt{x} + x^2}$
32. $y = \frac{8}{2x^3 - 7\sqrt{x^3}}$
33. $f(x) = e^{x^2 - 3}$
34. $f(x) = -e^{4x^3}$
35. $y = 2^{\frac{1}{x^2}}$
36. $f(x) = 3^{\frac{2}{x}}$
37. $f(x) = -e^{\sqrt{x}}$
38. $y = 3^{-x\sqrt{x}}$
39. $f(x) = -\sqrt{e^{-x}}$
40. $y = \sqrt[3]{e^{2x}}$
41. $f(x) = 4^{x^3 + 2x}$
42. $f(x) = (e^{-3x})^{4x}$
43. $f(x) = -4(4e^{4x^3} + 3x^2 + 8)^2$
44. $f(x) = -e^{e^x}$
45. $f(x) = -(4x^2 + 2x)e^{3x}$
46. $y = 72x^2e^x + 81xe^x$
47. $y = -e^{3x}(3e^x + 4x^5)$
48. $y = 4x^2(e^{-(2x^2 + 4)} - 15x^3 + 2x)$
49. $f(x) = (9x^6 + 7)e^{-x}$
50. $f(x) = -(x^5 - 12x^3)e^{-4x}$
51. $f(x) = -\frac{3x^3 - 2x}{e^x}$
52. $y = \frac{4x^2 + 18x}{8e^{2x}}$
53. $f(x) = \frac{e^x}{3x^2}$
54. $y = -\frac{e^{2x}}{9x^2 + 10x}$
55. $f(x) = \frac{2x + e^x}{2x^3 - x}$
56. $y = \frac{6x^2 + 3e^x + 4}{x^5 + 4x^4 + 15}$
57. $f(x) = \ln(4x^3)$
58. $y = -3\ln(2x^2 + 3x)$
59. $y = \log_{10}(5x^3 + 3x^{-2})$
60. $f(x) = \log_2\left(8x^7 + \frac{3x^3}{19}\right)$
61. $f(x) = -\frac{3}{\ln(x^2 + 2x + 16)}$
62. $f(x) = \frac{45x}{\ln(9x^3 + 5x^2)}$
63. $f(x) = \frac{6x^3 - 2x}{5\ln(x^4)}$
64. $f(x) = \frac{x^2(4x^2 - 9x + 15)}{4x + \ln(x^2 - 1)}$
65. $f(x) = \sin(4x^2)$
66. $y = -2\sin(6x^3)$
67. $y = \cos(e^x)$
68. $y = 12\cos(e^{-3x})$
69. $f(x) = 9\sin(8x^3 - 4x^2 + 2)$
70. $y = -8\cos(19x^2 + 2^{3x})$
71. $f(x) = \tan(4x^2 - 2)$
72. $f(x) = 35\tan\left(\frac{x^8}{7} - 12x^7 + 54\right)$
73. $f(x) = (\sin(4x) + \cos(8x))^3$
74. $f(x) = \sqrt{\sin(5x^3)}$
75. $y = \tan^3(6x)$
76. $y = (-\cos(7x) + \sin^2(x))^2$
77. $f(x) = 4x^2\sin(2x)$
78. $f(x) = -5x^3\cos\left(\frac{1}{x}\right)$
79. $y = e^{(x^2 + 2)}\tan(x^2 + 2)$
80. $f(x) = \sin(x^3 + 14)\tan(x^3 + 14)$
81. $f(x) = \sin^3(5x)\cos^2\left(\frac{5}{x^2}\right)$
82. $f(x) = \ln(\sin^2(9x))$
83. $f(x) = \ln(\cos(4x^3 + 18x + 12))$
84. $f(x) = \sin^4\left(\sqrt{8x^4 - 12x}\right)$
85. $y = \frac{\ln(x^2)}{\tan(4x)}$
86. $y = \frac{-3\sin(4x) + 9}{e^{-\frac{x}{100}}}$
87. $y = \frac{\sin^3(4x^3)}{\cos\left(\frac{x}{2}\right)}$
88. $y = -\cos\left(\frac{x^2 + 3}{x - 4}\right)$
89. $f(x) = -\sin^{-1}(3x^3)$
90. $f(x) = \tan^{-1}(9x + 5)$
91. $f(x) = \cos^{-1}(e^x)$
92. $f(x) = \sin^{-1}\left(\frac{1}{\sqrt{x}}\right)$
93. $f(x) = (\tan^{-1}(4x))^3$
94. $f(x) = \sin^{-1}(5x^2) + \cos^{-1}(5x^2)$
95. $f(x) = \ln(\cos^{-1}(5x) + 12)$
96. $f(x) = \sin^{-1}(13x^2)\cos^{-1}(x^3)$
97. $f(x) = \frac{1}{\sin^{-1}(x)}$
98. $f(x) = (6x^2 + 12)\sec^2(2x^3 + 12x + 15)$
99. $f(x) = \frac{28x^3 + 9x^2 - 18}{7x^4 + 2x^3 - 18x}$
100. $f(x) = e^{\sin^{-1}(x^3 - 12x^2)}$