Applied Calculus
Practice Derivatives Chain Rules Solutions

1. $5(5.1 + 20x)e^{5.1x+10x^2}$
2. $9.6x \left( \frac{4}{5}x^2 - 3 \right)^4$
3. $18.96x \frac{1.2x^2 + 7.9}{2x^2}$
4. $-11 \frac{-3 + x}{-3x + \frac{1}{2}x^2}$
5. $-3x \frac{-11 + \frac{1}{2}x^2}{-11 + \frac{1}{2}x^2}$
6. $132(22x - 30)^4$
7. $5.1 \ln (2) 2^{5.1x-30x^2} (5.1 - 60x)$
8. $\frac{-2.55x}{(\frac{1}{2} + 5.1x^2)^2}$
9. $-11(x + 4) \frac{\frac{1}{2}x^2 + 4x}{\frac{1}{2}x^2 + 4x}$
10. $-110 \frac{-5x + \frac{4}{5}}{-5x + \frac{4}{5}}$
11. $\frac{4}{5} (27.9x - 5) \ln (1.5) 1.5^{7.9x^2-5x}$
12. $10 (-3 + x) e^{-3x+\frac{1}{2}x^2}$
13. $\frac{10}{3} \frac{\frac{1}{2}x^5}{\frac{1}{2}x^5}$
14. $-86.9 \frac{7.9x - 3}{7.9x - 3}$
15. $-\frac{5}{2} \frac{1}{-5x - \frac{2}{5}}$
16. $\frac{484}{22x - 11}$
17. $8 \cdot 1.5^{10x-5} \ln (1.5)$
18. $-4e^{\frac{4}{2}x+\frac{4}{7}}$
19. $5.1 \cdot 1.2e^{1.2x+1.2}$
20. $-\frac{-48x}{\frac{2}{5} - 30x^2}$
21. $-\frac{-4}{1.2 - \frac{2}{5}x}$
22. $-\frac{-5.1}{(5.1x - 3)^3}$
23. $1.2 (15.8x + 5) \ln (1.5) 1.5^{7.9x^2+5x}$
24. $\frac{1}{5} \frac{-\frac{4}{5}x - 5}{\frac{5}{2} - 30x^2}$
25. $40.29 \ln (1.5) 1.5^{5.1x-3}$
26. $24x \cdot \ln(2) 2^{10x^2+4}$
27. $-\frac{-25.5}{5.1x + \frac{1}{3}}$
28. $180xe^{-30x^2+4}$
29. $\frac{110}{3} (7.9 + 22x)^4$
30. $-15.3 \frac{5.1x + 5}{5.1x + 5}$
31. $\frac{20}{3} x \cdot 1.5^{10x^2+4} \ln (1.5)$
32. $10 \left( 4x \cdot \frac{3}{7} \right)^4$
33. $16x \cdot 2^{\frac{4}{3} + 10x^2} \ln (2)$
34. $\frac{-13.2}{-11x - \frac{4}{7}}$
35. $-20 \left( -\frac{5x}{7} - \frac{2}{5} \right)^4$
36. $\frac{4}{5} \left( -\frac{2}{5} - \frac{3}{7}x \right)^4 \left( -\frac{2}{5} - \frac{6}{7}x \right)$
37. $-\frac{-15}{2} (3x - 5)^4$
38. $\frac{-2}{\left( -5x + \frac{5}{4} \right)^2}$
39. $\frac{30}{\frac{7}{2}} \frac{x}{-5 - \frac{4}{7}x^2}$
40. $25.28 (7.9x - 3)^3$
41. $\frac{-55}{-11x - \frac{4}{7}}$
42. $\frac{3}{2} \left( \frac{1}{3}x - \frac{3}{7}x^2 \right)^2 \left( \frac{1}{3} - \frac{6}{7}x \right)$
43. $\frac{102x}{\frac{4}{5} + 10x^2}$
44. $81.6 \left( 4x^2 + 5.1 \right) x$
45. $\frac{2.55x}{\sqrt{5.1x^2 + 22}}$
46. $\frac{-2}{5} \left( -\frac{2}{5}x + 4 \right)^2$
47. $\frac{-6}{(1.2 + 5x)^2}$