The Infinite Actuary Exam 1/P Online Seminar
Practice Problems on One Dimensional Derivatives

1. $\frac{d}{dx}e^{3x^2+5x}$
2. $\frac{d}{dx}2^{2x}$
3. $\frac{d}{dx}(x^2+5)e^{2x-3}$
4. $\frac{d}{dx}\frac{x^2}{1+x^2}$
5. $\frac{d}{dx}\frac{x}{1+x^2}\Big|_{x=0}$
6. $\frac{d^2}{dx^2}\frac{1}{1+x^2}\Big|_{x=0}$
7. $\frac{d}{dx}\left(1-3e^{-3x}\right)$
8. $\frac{d}{dx}\frac{x}{(1+x)^2}$
9. $\frac{d}{dx}\frac{3x-5}{(4+x)^3}$
10. $\frac{d}{dt}e^{5e^t-5}$
11. $\frac{d}{dt}e^{5e^t-5-t^2}$
12. $\frac{d}{dt}(\sin t+1)$
13. $\frac{d}{dt}\frac{5}{t^2}$
14. $\frac{d}{dt}\frac{5}{(t+1)^3}$
15. $\frac{d}{dx}|x-2|$
16. $\frac{d}{dx}|x|^3$
17. $\frac{d}{dx}e^{|x+2|}$
18. $\frac{d}{dt}e^{e^{3t}-1}$
19. $\frac{d^2}{dt^2}e^{e^{3t}-1}$
20. $\frac{d}{dt}\frac{1}{(1-3t)^4}$
21. $\frac{d}{dt}\frac{1}{\left(1-\frac{t}{2}\right)^2}$
22. $\frac{d}{dx}e^{2x^2-5x+3}$
23. $\frac{d^2}{dx^2}e^{2x^2-5x+3}$
24. $\frac{d}{dx}\left(2x^5+x^3+8x\right)^4$
25. $\frac{d}{dy}\frac{y^2}{6}e^{-3y}$
26. $\frac{d^2}{dy^2}\frac{y^2}{6}e^{-3y}$
27. $\frac{d}{dx}\left(3x^2+4\right)^5$
28. $\frac{d}{dt}\left(2t^2+1\right)\cdot e^{5t}$
29. $\frac{d}{dx}\frac{e^{-x}}{x}$
30. $\frac{d}{dz}\ln(z)$
31. $\frac{d}{dy}\ln(2y+5)$
32. $\frac{d}{dt}\ln\left(t^2\right)$
33. $\frac{d}{dx}e^{-x^2/2}$
34. $\frac{d}{dx}\frac{x^3+5}{(2+x^3)^4}$
35. $\frac{d}{dx}\frac{2x+e^x+3}{e^{2x}-x}$
36. $\frac{d}{ds}s^3\cdot(3s^2-4s+5)^4$
37. $\frac{d}{dt}(2t^3-1)^2\cdot(3t+7)^4$
38. $\frac{d}{dx}\frac{(x^3+1)^4}{(3x^2-5)^7}$
39. $\frac{d}{dz}[2z-(z^5+z^3)^6]^3$
40. $\frac{d}{dr}2r\cdot e^{-2r^2-5r}$