Formulas for Derivatives

1. $c' = 0$
2. $x' = 1$
3. $(x^n)' = nx^{n-1}$
4. $(cf(x))' = cf'(x)$
5. $(f(x) \pm g(x))' = f'(x) \pm g'(x)$
6. $(f(x)g(x))' = f'(x)g(x) + f(x)g'(x)$
7. $\left(\dfrac{f(x)}{g(x)}\right)' = \dfrac{f'(x)g(x) - f(x)g'(x)}{g(x)^2}$
8. $(\sin(x))' = \cos(x)$
9. $(\cos(x))' = -\sin(x)$
10. $(\tan(x))' = \sec^2(x)$
11. $(\cot(x))' = -\csc^2(x)$
12. $(\sec(x))' = \sec(x)\tan(x)$
13. $(\csc(x))' = -\csc(x)\cot(x)$
14. $(e^x)' = e^x$
15. $(\ln(x))' = \dfrac{1}{x}$
16. $[f(g(x))]' = f'(g(x))g'(x)$
17. $\dfrac{dy}{dx} = \dfrac{dy}{du}\dfrac{du}{dx}$
18. $\forall\ r \in \mathbb{R}, \quad (x^r)' = rx^{r-1}$
19. $(a^x)' = \ln(a)a^x$
20. $(\log_a(x))' = \dfrac{1}{\ln(a)x}$
21. $(\sin^{-1}(x))' = \dfrac{1}{\sqrt{1-x^2}}$
22. $(\cos^{-1}(x))' = \dfrac{-1}{\sqrt{1-x^2}}$
23. $(\tan^{-1}(x))' = \dfrac{1}{1+x^2}$
24. $(\cot^{-1}(x))' = \dfrac{-1}{1+x^2}$
25. $(\sec^{-1}(x))' = \dfrac{1}{|x|\sqrt{x^2-1}}$
26. $(\csc^{-1}(x))' = \dfrac{-1}{|x|\sqrt{x^2-1}}$