Regras de Diferenciação

1 $\frac{d}{dx}(c) = 0$

2 $\frac{d}{dx}[c\, f(x)] = c\, f'(x)$

3 $\frac{d}{dx}[f(x) + g(x)] = f'(x) + g'(x)$

4 $\frac{d}{dx}[f(x) - g(x)] = f'(x) - g'(x)$

5 $\frac{d}{dx}[f(x)\, g(x)] = f'(x)\, g(x) + f(x)\, g'(x)$

6 $\frac{d}{dx}\left[\frac{f(x)}{g(x)}\right] = \frac{f'(x)\, g(x) - f(x)\, g'(x)}{[g(x)]^2}$

7 $\frac{d}{dx} f(g(x)) = f'(g(x))\, g'(x)$

8 $\frac{d}{dx}(x^n) = n\, x^{n-1}$

9 $\frac{d}{dx}(e^x) = e^x$

10 $\frac{d}{dx}(a^x) = a^x \ln(a)$

11 $\frac{d}{dx}\ln|x| = \frac{1}{x}$

12 $\frac{d}{dx}\log_a(x) = \frac{1}{x \ln(a)}$

13 $\frac{d}{dx}\text{sen}(x) = \cos(x)$

14 $\frac{d}{dx}\cos(x) = -\text{sen}(x)$

15 $\frac{d}{dx}\text{tg}(x) = \sec^2(x)$

16 $\frac{d}{dx}\text{cossec}(x) = -\text{cossec}(x)\cot(x)$

17 $\frac{d}{dx}\sec(x) = \sec(x)\ \ \text{tg}(x)$

18 $\frac{d}{dx}\text{cotg}(x) = -\text{cossec}^2(x)$

19 $\frac{d}{dx}\text{arc sen}(x) = \frac{1}{\sqrt{1-x^2}}$

20 $\frac{d}{dx}\text{arc cos}(x) = -\frac{1}{\sqrt{1-x^2}}$

21 $\frac{d}{dx}\text{arc tg}(x) = \frac{1}{1+x^2}$

22 $\frac{d}{dx}\text{arc cossec}(x) = -\frac{1}{x\sqrt{x^2-1}}$

23 $\frac{d}{dx}\text{arc sec}(x) = \frac{1}{x\sqrt{x^2-1}}$

24 $\frac{d}{dx}\text{arc cotg}(x) = -\frac{1}{1+x^2}$

25 $\frac{d}{dx}\text{senh}(x) = \cosh(x)$

26 $\frac{d}{dx}\cosh(x) = \text{senh}(x)$

27 $\frac{d}{dx}\text{tgh}(x) = \text{sech}^2(x)$

28 $\frac{d}{dx}\text{cossech}(x) = -\text{cossech}(x)\ \ \text{cotgh}(x)$

29 $\frac{d}{dx}\text{sech}(x) = -\text{sech}(x)\ \text{tgh}(x)$

30 $\frac{d}{dx}\text{cotgh}(x) = -\text{cossech}^2(x)$

31 $\frac{d}{dx}\text{arc senh}(x) = \frac{1}{\sqrt{1+x^2}}$

32 $\frac{d}{dx}\text{arc cosh}(x) = \frac{1}{\sqrt{x^2-1}}$

33 $\frac{d}{dx}\text{arc tgh}(x) = \frac{1}{1-x^2}$

34 $\frac{d}{dx}\text{arc cossech}(x) = -\frac{1}{|x|\sqrt{x^2+1}}$

35 $\frac{d}{dx}\text{arc sech}(x) = -\frac{1}{x\sqrt{1-x^2}}$

36 $\frac{d}{dx}\text{arc cotgh}(x) = \frac{1}{1-x^2}$