

$$D c = 0, \quad c \in \mathfrak{R}$$

$$D x = 1$$

$$D x^2 = 2x$$

$$D x^n = n x^{n-1}, \quad n \in \mathbb{N}$$

$$D \frac{1}{x} = -\frac{1}{x^2}$$

$$D \frac{1}{x^n} = -\frac{n}{x^{n+1}}, \quad n \in \mathbb{N}$$

$$D \sqrt{x} = \frac{1}{2\sqrt{x}}$$

$$D \frac{1}{\sqrt{x}} = -\frac{1}{2x\sqrt{x}}$$

$$D \sqrt[n]{x} = \frac{1}{n \sqrt[n]{x^{n-1}}}, \quad n \in \mathbb{N}$$

$$D \sqrt[n]{x^m} = \frac{m}{n \sqrt[n]{x^{n-m}}}, \quad \text{con } n > m; n, m \in \mathbb{N}$$

$$D \frac{1}{\sqrt[n]{x}} = -\frac{1}{n x \sqrt[n]{x}}, \quad n \in \mathbb{N}$$

$$D \frac{1}{\sqrt[n]{x^m}} = -\frac{m}{n x \sqrt[n]{x^m}}, \quad \text{con } n > m; n, m \in \mathbb{N}$$

$$D x^\alpha = \alpha x^{\alpha-1}, \quad \alpha \in \mathfrak{R} \setminus \{0\}$$

$$D \log_a x = \frac{1}{x \log a}, \quad a > 0 \quad e \quad a \neq 1$$

$$D \log x = \frac{1}{x}$$

$$D a^x = a^x \log a, \quad a > 0 \quad e \quad a \neq 1$$

$$D e^x = e^x$$

$$D \operatorname{sen} x = \cos x,$$

$$D \operatorname{arcsen} x = \frac{1}{\sqrt{1-x^2}}$$

$$D \cos x = -\operatorname{sen} x,$$

$$D \operatorname{arccos} x = -\frac{1}{\sqrt{1-x^2}}$$

$$D \operatorname{tg} x = \frac{1}{\cos^2 x} = 1 + \operatorname{tg}^2 x,$$

$$D \operatorname{arctg} x = \frac{1}{1+x^2}$$

$$D \operatorname{ctg} x = -\frac{1}{\operatorname{sen}^2 x} = -1 - \operatorname{ctg}^2 x,$$

$$D \operatorname{arcctg} x = -\frac{1}{1+x^2}$$

$$D[af(x) + bg(x)] = af'(x) + bg'(x), \quad f'(x) = Df(x), \quad g'(x) = Dg(x)$$

$$D[f(x)g(x)] = f'(x)g(x) + f(x)g'(x)$$

$$D\left[\frac{f(x)}{g(x)}\right] = \frac{f'(x)g(x) - f(x)g'(x)}{[g(x)]^2}, \quad D[f(x)]^{g(x)} = [f(x)]^{g(x)} \left[ g'(x) \log f(x) + g(x) \frac{f'(x)}{f(x)} \right]$$

$$D[f(x)]^2 = 2f(x)f'(x),$$

$$D[f(x)]^n = n[f(x)]^{n-1}f'(x), \quad n \in \mathbb{N}$$

$$D\frac{1}{f(x)} = -\frac{f'(x)}{[f(x)]^2},$$

$$D\frac{1}{[f(x)]^n} = -\frac{nf'(x)}{[f(x)]^{n+1}}, \quad n \in \mathbb{N}$$

$$D\sqrt{f(x)} = \frac{f'(x)}{2\sqrt{f(x)}},$$

$$D\frac{1}{\sqrt{f(x)}} = -\frac{f'(x)}{2f(x)\sqrt{f(x)}}$$

$$D\sqrt[n]{f(x)} = \frac{f'(x)}{n\sqrt[n]{f(x)}^{n-1}},$$

$$D\frac{1}{\sqrt[n]{f(x)}} = -\frac{f'(x)}{nf(x)\sqrt[n]{f(x)}}, \quad n \in \mathbb{N}$$

$$D\sqrt[n]{f(x)^m} = \frac{mf'(x)}{n\sqrt[n]{f(x)}^{n-m}},$$

$$D\frac{1}{\sqrt[n]{f(x)}^m} = -\frac{mf'(x)}{nf(x)\sqrt[n]{f(x)}^m}, \quad \text{con } n > m; n, m \in \mathbb{N}$$

$$D[f(x)]^\alpha = \alpha[f(x)]^{\alpha-1}f'(x), \quad \alpha \in \mathbb{R} \setminus \{0\}$$

$$D\log_a f(x) = \frac{f'(x)}{f(x)\log a}, \quad a > 0 \quad e \quad a \neq 1$$

$$D\log f(x) = \frac{f'(x)}{f(x)}$$

$$Da^{f(x)} = a^{f(x)}f'(x)\log a, \quad a > 0 \quad e \quad a \neq 1$$

$$De^{f(x)} = e^{f(x)}f'(x)$$

$$D\text{sen } f(x) = f'(x)\cos f(x),$$

$$D\text{arcsen } f(x) = \frac{f'(x)}{\sqrt{1-[f(x)]^2}}$$

$$D\cos f(x) = -f'(x)\text{sen } f(x),$$

$$D\arccos f(x) = -\frac{f'(x)}{\sqrt{1-[f(x)]^2}}$$

$$D\text{tg } f(x) = \frac{f'(x)}{\cos^2 f(x)} = [1 + \text{tg}^2 f(x)]f'(x),$$

$$D\text{arctg } f(x) = \frac{f'(x)}{1+[f(x)]^2}$$

$$D\text{ctg } f(x) = -\frac{f'(x)}{\text{sen}^2 f(x)} = -[1 + \text{ctg}^2 f(x)]f'(x),$$

$$D\text{arcctg } f(x) = -\frac{f'(x)}{1+[f(x)]^2}$$