

1) $(k)' = 0$	10) $(\operatorname{tg} f)' = \sec^2 f \cdot f'$ $(\sec f = \frac{1}{\cos f})$
2) $(f^\alpha)' = \alpha \cdot f^{\alpha-1} \cdot f'$ , $\alpha \in \mathbb{R}$	11) $(\operatorname{cotg} f)' = -\operatorname{cosec}^2 f \cdot f'$ $(\operatorname{cotg} f = \frac{1}{\operatorname{tg} f}$ e $\operatorname{cosec} f = \frac{1}{\sin f}$ )
3) $(e^f)' = e^f \cdot f'$	12) $(\sec f)' = \sec f \cdot \operatorname{tg} f \cdot f'$
4) $(a^f)' = a^f \cdot f' \cdot \ln a$ , $a \in \mathbb{R}^+$	13) $(\operatorname{cosec} f)' = -\operatorname{cosec} f \cdot \operatorname{cotg} f \cdot f'$
5) $(\ln f)' = \frac{f'}{f}$	14) $(\arcsin f)' = \frac{f'}{\sqrt{1-f^2}}$
6) $(\log_a f)' = \frac{f'}{f \cdot \ln a}$ , $a \in \mathbb{R}^+ \setminus \{1\}$	15) $(\arccos f)' = \frac{-f'}{\sqrt{1-f^2}}$
7) $(f^g)' = g \cdot f^{g-1} \cdot f' + f^g \cdot \ln f \cdot g'$ , $f > 0$ $(f^g = e^{g \ln f})$	16) $(\operatorname{arctg} f)' = \frac{f'}{1+f^2}$
8) $(\sin f)' = \cos f \cdot f'$	
9) $(\cos f)' = -\sin f \cdot f'$	

Tabela 1.1: Derivadas de algumas funções elementares.

1) $(f + g)' = f' + g'$
2) $(\alpha f)' = \alpha f'$ , $\alpha \in \mathbb{R}$
3) $(fg)' = f'g + fg'$
4) $\left(\frac{f}{g}\right)' = \frac{f'g - fg'}{g^2}$
5) $(g \circ f)'(x) = g'[f(x)] f'(x)$

Tabela 1.2: Regras de derivação.

1) $\sin^2 x + \cos^2 x = 1$	3) $1 + \operatorname{cotg}^2 x = \operatorname{cosec}^2 x$
2) $1 + \operatorname{tg}^2 x = \sec^2 x$	5) $\cos(x + y) = \cos x \cos y - \sin x \sin y$
4) $\sin(x + y) = \sin x \cos y + \sin y \cos x$	7) $\cos(x - y) = \cos x \cos y + \sin x \sin y$
6) $\sin(x - y) = \sin x \cos y - \sin y \cos x$	9) $\cos 2x = \cos^2 x - \sin^2 x$
8) $\sin 2x = 2 \sin x \cos x$	11) $\cos^2 x = \frac{1}{2}(1 + \cos 2x)$
10) $\sin^2 x = \frac{1}{2}(1 - \cos 2x)$	13) $\cos x = \frac{1 - \operatorname{tg}^2 x/2}{1 + \operatorname{tg}^2 x/2}$
12) $\sin x = \frac{2 \operatorname{tg} x/2}{1 + \operatorname{tg}^2 x/2}$	
14) $\sin mx \cos nx = \frac{1}{2}[\sin(m+n)x + \sin(m-n)x]$	
15) $\cos mx \cos nx = \frac{1}{2}[\cos(m+n)x + \cos(m-n)x]$	16) $\sin mx \sin nx = \frac{1}{2}[\cos(m-n)x - \cos(m+n)x]$

Tabela 2.4: Fórmulas trigonométricas que poderão ser úteis na primitivação.

Função a primitivar	Primitiva
1) $k$ , $k \in \mathbb{R}$	$kx$
2) $f^\alpha \cdot f'$ , $\alpha \in \mathbb{R} \setminus \{-1\}$ $x^\alpha$ , $\alpha \in \mathbb{R} \setminus \{-1\}$	$\frac{f^{\alpha+1}}{\alpha+1}$ $\frac{x^{\alpha+1}}{\alpha+1}$
3) $\frac{f'}{f}$ $\frac{1}{x}$	$\ln  f $ $\ln  x $
4) $\sin f \cdot f'$	$-\cos f$
5) $\cos f \cdot f'$	$\sin f$
6) $\operatorname{tg} f \cdot f'$	$-\ln  \cos f $
7) $\operatorname{cotg} f \cdot f'$	$\ln  \sin f $
8) $\sec^2 f \cdot f'$	$\operatorname{tg} f$
9) $\operatorname{cosec}^2 f \cdot f'$	$-\operatorname{cotg} f$
10) $\sec f \cdot f'$	$\ln  \sec f + \operatorname{tg} f $
11) $\operatorname{cosec} f \cdot f'$	$\ln  \operatorname{cosec} f - \operatorname{cotg} f $
12) $\sec f \cdot \operatorname{tg} f \cdot f'$	$\sec f$
13) $\operatorname{cosec} f \cdot \operatorname{cotg} f \cdot f'$	$-\operatorname{cosec} f$
14) $a^f \cdot f'$ , $a \in \mathbb{R}^+ \setminus \{1\}$	$\frac{a^f}{\ln a}$
15) $e^f \cdot f'$	$e^f$
16) $\frac{f'}{\sqrt{1-f^2}}$	$\arcsin f$
17) $\frac{-f'}{\sqrt{1-f^2}}$	$\arccos f$
18) $\frac{f'}{1+f^2}$	$\operatorname{arctg} f$

Tabela 2.1: Primitivas de algumas funções.

1) $P(f + g) = Pf + Pg$
2) $P\lambda f = \lambda Pf$ , com $\lambda \in \mathbb{R}$
3) $P(fg) = Fg - P(Fg')$ , com $F' = Pf$
4) $Pf(x) = P(f(\varphi(t))\varphi'(t))$ , com $x = \varphi(t)$

Tabela 2.3: Propriedades das primitivas.