

Function $f(x)$	Derivative $f'(x)$	Restrictions on domain of $x \in \mathbb{R}$
1. C (const)	0	
2. x^α	$\alpha x^{\alpha-1}$	$x > 0$ for $\alpha \in \mathbb{R}$ $x \in \mathbb{R}$ for $\alpha \in \mathbb{N}$
3. a^x	$a^x \ln a$	$x \in \mathbb{R}$ ($a > 0, a \neq 1$)
4. $\log_a x $	$\frac{1}{x \ln a}$	$x \in \mathbb{R} \setminus 0$ ($a > 0, a \neq 1$)
5. $\sin x$	$\cos x$	
6. $\cos x$	$-\sin x$	
7. $\tan x$	$\frac{1}{\cos^2 x}$	$x = \frac{\pi}{2} + \pi k, k \in \mathbb{Z}$
8. $\cot x$	$-\frac{1}{\sin^2 x}$	$x = \pi k, k \in \mathbb{Z}$
9. $\arcsin x$	$\frac{1}{\sqrt{1-x^2}}$	$ x < 1$
10. $\arccos x$	$-\frac{1}{\sqrt{1-x^2}}$	$ x < 1$
11. $\arctan x$	$\frac{1}{1+x^2}$	
12. $\operatorname{arccot} x$	$-\frac{1}{1+x^2}$	
13. $\sinh x$	$\cosh x$	
14. $\cosh x$	$\sinh x$	
15. $\tanh x$	$\frac{1}{\cosh^2 x}$	
16. $\operatorname{coth} x$	$-\frac{1}{\sinh^2 x}$	$x \neq 0$
17. $\operatorname{arsinh} x = \ln(x + \sqrt{1+x^2})$	$\frac{1}{\sqrt{1+x^2}}$	
18. $\operatorname{arcosh} x = \ln(x \pm \sqrt{x^2-1})$	$\pm \frac{1}{\sqrt{x^2-1}}$	$ x > 1$
19. $\operatorname{artanh} x = \frac{1}{2} \ln \frac{1+x}{1-x}$	$\frac{1}{1-x^2}$	$ x < 1$
20. $\operatorname{arcoth} x = \frac{1}{2} \ln \frac{x+1}{x-1}$	$\frac{1}{x^2-1}$	$ x > 1$