

	Function	Derivative
Sum/Difference	$f(x) \pm g(x)$	$f'(x) \pm g'(x)$
Constant Multiple/Scalar	$cf(x)$ for $c \in \mathbb{R}$	$cf'(x)$ for $c \in \mathbb{R}$
Constant	c for $c \in \mathbb{R}$	0
Product	$f(x)g(x)$	$f(x)g'(x) + g(x)f'(x)$ <i>One dee two plus two dee one</i>
Quotient	$\frac{f(x)}{g(x)}$	$\frac{g(x)f'(x) - f(x)g'(x)}{(g(x))^2}$ <i>Low dee high minus high dee low all over low squared</i>
Chain	$f(g(x))$	$f'(g(x))g'(x)$ <i>Derivative of the outer times the derivative of the inner</i>
Logarithmic	$\ln(x)$	$\frac{1}{x}$
	$\log_a(x)$ for $a \in \mathbb{R}$	$\frac{1}{x \ln(a)}$ for $a \in \mathbb{R}$
Exponential	e^x	e^x
	a^x for $a \in \mathbb{R}$	$\ln(a)a^x$ for $a \in \mathbb{R}$
Trigonometric	$\sin(x)$	$\cos(x)$
	$\cos(x)$	$-\sin(x)$
	$\tan(x)$	$\sec^2(x)$
	$\csc(x)$	$-\csc(x)\cot(x)$
	$\sec(x)$	$\sec(x)\tan(x)$
	$\cot(x)$	$-\csc^2(x)$
Trigonometric Inverse	$\sin^{-1}(x)$	$\frac{1}{\sqrt{1-x^2}}$
	$\cos^{-1}(x)$	$-\frac{1}{\sqrt{1-x^2}}$
	$\tan^{-1}(x)$	$\frac{1}{1+x^2}$
	$\csc^{-1}(x)$	$-\frac{1}{ x \sqrt{x^2-1}}$
	$\sec^{-1}(x)$	$\frac{1}{ x \sqrt{x^2-1}}$
	$\cot^{-1}(x)$	$-\frac{1}{1+x^2}$

Hyperbolic Trigonometric	$\sinh(x)$	$\cosh(x)$
	$\cosh(x)$	$\sinh(x)$
	$\tanh(x)$	$\operatorname{sech}^2 x$
	$\operatorname{csch}(x)$	$-\operatorname{coth} x \operatorname{csch} x$
	$\operatorname{sech}(x)$	$-\tanh x \operatorname{sech} x$
	$\operatorname{coth}(x)$	$-\operatorname{csch}^2 x$
Hyperbolic Trigonometric Inverse	$\sinh^{-1}(x)$	$\frac{1}{\sqrt{x^2+1}}$
	$\cosh^{-1}(x)$	$\frac{1}{\sqrt{x^2-1}}$
	$\tanh^{-1}(x)$	$\frac{1}{1-x^2}$
	$\operatorname{csch}^{-1}(x)$	$-\frac{1}{x\sqrt{1+x^2}}$
	$\operatorname{sech}^{-1}(x)$	$-\frac{1}{x\sqrt{1-x^2}}$
	$\operatorname{coth}^{-1}(x)$	$\frac{1}{1-x^2}$
Absolute Value	$ x $	$\frac{x}{ x } = \operatorname{sgn}(x)$