$\frac{d}{dx}(c)=0$	Derivative of a constant function.
$\frac{d}{dx}(x)=1$	Derivative of a linear function.
$\frac{d}{dx}\left(x^n\right)=nx^{n-1}$	**The Power Rule** Where n is any real number.
$\frac{d}{dx}\left[cf(x)\right]=c\frac{d}{dx}f(x)$	The Constant Multiple Rule Where c is a constant and f is a differentiable function.
$\frac{d}{dx}\left[f(x)+g(x)\right]=\frac{d}{dx}f(x)+\frac{d}{dx}g(x)$	The Sum Rule Where f and g are both differentiable.
$\frac{d}{dx}\left[f(x)-g(x)\right]=\frac{d}{dx}f(x)-\frac{d}{dx}g(x)$	The Difference Rule Where f and g are both differentiable.
$\frac{d}{dx}\left(e^x\right)=e^x$	Derivative of the Natural Exponential Function
$\frac{d}{dx}\left[f(x)g(x)\right]=f(x)\frac{d}{dx}\left[g(x)\right]+g(x)\frac{d}{dx}\left[f(x)\right]$	**The Product Rule** Where f and g are both differentiable.
$\frac{d}{dx}\left[\frac{f(x)}{g(x)}\right]=\frac{g(x)\frac{d}{dx}\left[f(x)\right]-f(x)\frac{d}{dx}\left[g(x)\right]}{\left[g(x)\right]^2}$	**The Quotient Rule** Where f and g are both differentiable.
$\frac{d}{dx}\left[f(g(x))\right]=f'(g(x))g'(x)$ Or $\frac{dy}{dx}=\frac{dy}{du}\frac{du}{dx}$	**The Chain Rule** Where f and g are both differentiable. Where $y=f(u)$ and $u=g(x)$ are both differentiable.
$\frac{d}{dx}\left(a^x\right)=a^x\ln a$	$\frac{d}{dx}\left(\ln x\right)=\frac{1}{x}$
$\frac{d}{dx}\left(\log_a x\right)=\frac{1}{x\ln a}$	$\frac{d}{dx}\left(\ln\lvert x\rvert\right)=\frac{1}{x}$

Derivatives of Trigonometric Functions	
$\frac{d}{dx}(\sin x)=\cos x$	$\frac{d}{dx}(\csc x)=-\csc x\cot x$
$\frac{d}{dx}(\cos x)=-\sin x$	$\frac{d}{dx}(\sec x)=\sec x\tan x$
$\frac{d}{dx}(\tan x)=\sec^2 x$	$\frac{d}{dx}(\cot x)=-\csc^2 x$

Derivatives of Inverse Trigonometric Functions	
$\frac{d}{dx}(\sin^{-1} x)=\frac{1}{\sqrt{1-x^2}}$	$\frac{d}{dx}(\csc^{-1} x)=-\frac{1}{\lvert x\rvert\sqrt{x^2-1}}$
$\frac{d}{dx}(\cos^{-1} x)=-\frac{1}{\sqrt{1-x^2}}$	$\frac{d}{dx}(\sec^{-1} x)=\frac{1}{\lvert x\rvert\sqrt{x^2-1}}$
$\frac{d}{dx}(\tan^{-1} x)=\frac{1}{1+x^2}$	$\frac{d}{dx}(\cot^{-1} x)=-\frac{1}{1+x^2}$

Derivatives of Hyperbolic Functions	
$\frac{d}{dx}(\sinh x)=\cosh x$	$\frac{d}{dx}(\operatorname{csch} x)=-\operatorname{csch} x\coth x$
$\frac{d}{dx}(\cosh x)=\sinh x$	$\frac{d}{dx}(\operatorname{sech} x)=-\operatorname{sech} x\tanh x$
$\frac{d}{dx}(\tanh x)=\operatorname{sech}^2 x$	$\frac{d}{dx}(\coth x)=-\operatorname{csch}^2 x$

Derivatives of inverse Hyperbolic Functions	
$\frac{d}{dx}(\sinh^{-1} x)=\frac{1}{\sqrt{1+x^2}}$	$\frac{d}{dx}(\operatorname{csch}^{-1} x)=-\frac{1}{\lvert x\rvert\sqrt{1+x^2}}$
$\frac{d}{dx}(\cosh^{-1} x)=\frac{1}{\sqrt{x^2-1}}$	$\frac{d}{dx}(\operatorname{sech}^{-1} x)=-\frac{1}{x\sqrt{1-x^2}}$
$\frac{d}{dx}(\tanh^{-1} x)=\frac{1}{1-x^2}$	$\frac{d}{dx}(\coth^{-1} x)=\frac{1}{1-x^2}$