List of Important Derivative Rules

Let c be a constant number, and let $f(x)$ and $g(x)$ be differentiable functions.

$f'(x) = \lim_{h \to 0} \dfrac{f(x+h) - f(x)}{h}$	Definition of the derivative
$f'(c) = \lim_{h \to 0} \dfrac{f(c+h) - f(c)}{h}$	Definition of the derivative at the point $x = c$
$y = f(c) + f'(c)(x - c)$	Equation of the tangent line to $f(x)$ at $x = c$
$[c]' = 0$	Derivative of a constant
$[x^c]' = cx^{c-1}$	Power Rule
$[cf(x)]' = cf'(x)$	Constant Multiplier Rule
$[f(x) + g(x)]' = f'(x) + g'(x)$	Sum Rule
$[f(x) - g(x)]' = f'(x) - g'(x)$	Difference Rule
$[f(x)g(x)]' = f'(x)g(x) + f(x)g'(x)$	Product Rule
$\left[\dfrac{f(x)}{g(x)}\right]' = \dfrac{f'(x)g(x) - f(x)g'(x)}{[g(x)]^2}$	Quotient Rule
$[g(f(x))]' = g'(f(x)) \cdot f'(x)$	Chain Rule
$f''(x) = [f'(x)]'$	Definition of second derivative
$[e^{g(x)}]' = g'(x) \cdot e^{g(x)}$	Derivative of an exponential function
$[\ln(g(x))]' = \dfrac{g'(x)}{g(x)}$	Derivative of the natural logarithm