

Basic Derivative Formulas.

The basic rules for derivative are summarized in the following table:

Function	Derivative	Name
$cf(x)$	$cf'(x)$	
$f(x) + g(x)$	$f'(x) + g'(x)$	Sum Rule
$f(x)g(x)$	$f'(x)g(x) + f(x)g'(x)$	Product Rule
$(f(x))^n$	$n(f(x))^{n-1}f'(x)$	Power Rule
$e^{f(x)}$	$e^{f(x)}f'(x)$	
$b^{f(x)}$	$\ln(b)b^{f(x)}f'(x)$	
$\frac{f(x)}{g(x)}$	$\frac{f'(x)g(x) - f(x)g'(x)}{(g(x))^2}$	Quotient Rule
$f(g(x))$	$f'(g(x))g'(x)$	Chain Rule

We also know the derivatives of the following functions:

Function	Derivative
c	0
$mx + b$	m
cx^n	cnx^{n-1}
e^x	e^x
b^x	$\ln(b)b^x$
$\ln(x)$	$\frac{1}{x}$
$\log_b(x)$	$\frac{1}{x \ln(b)}$