Table of derivatives

Addition		**Multiplication**	
$y = u + v$	$y' = u' + v'$	$y = u\,v$	$y' = u'\,v + v'\,u$
Subtraction		**Division**	
$y = u - v$	$y' = u' - v'$	$y = \frac{u}{v}$	$y' = \frac{u'\,v - v'\,u}{v^2}$
$y = k$	$y' = 0$		
$y = x$	$y' = 1$	$y = u$	$y' = u'$
$y = k\,x$	$y' = k$	$y = k\,u$	$y' = k\,u'$
$y = \frac{1}{x}$	$y' = \frac{-1}{x^2}$	$y = \frac{1}{u}$	$y' = \frac{-u'}{u^2}$
$y = x^2$	$y' = 2\,x$	$y = u^2$	$y' = 2\,u\,u'$
$y = x^n$	$y' = n\,x^{n-1}$	$y = u^n$	$y' = n\,u^{n-1}\,u'$
$y = e^x$	$y' = e^x$	$y = e^u$	$y' = u'\,e^u$
$y = a^x$	$y' = a^x \ln a$	$y = a^u$	$y' = u'\,a^u \ln a$
$y = \ln x$	$y' = \frac{1}{x}$	$y = \ln u$	$y' = \frac{u'}{u}$
$y = \log_a x$	$y' = \frac{1}{x \ln a}$	$y = \log_a u$	$y' = \frac{u'}{u \ln a}$
$y = \sqrt{x}$	$y' = \frac{1}{2\sqrt{x}}$	$y = \sqrt{u}$	$y' = \frac{u'}{2\sqrt{u}}$
$y = \sin x$	$y' = \cos x$	$y = \sin u$	$y' = u' \cos u$
$y = \cos x$	$y' = -\sin x$	$y = \cos u$	$y' = -u' \sin u$
$y = \tan x$	$\begin{cases} y' = 1 + \tan^2 x \\ = \frac{1}{\cos^2 x} = \sec^2 x \end{cases}$	$y = \tan u$	$\begin{cases} y' = (1 + \tan^2 u)\,u' \\ = \frac{u'}{\cos^2 u} = u' \sec^2 u \end{cases}$
$y = \operatorname{cotan} x$	$y' = \frac{-1}{\sin^2 x} = -\operatorname{cosec}^2 x$	$y = \operatorname{cotan} u$	$y' = \frac{-u'}{\sin^2 u} = -u' \operatorname{cosec}^2 u$
$y = \arcsin x$	$y' = \frac{1}{\sqrt{1 - x^2}}$	$y = \arcsin u$	$y' = \frac{u'}{\sqrt{1 - u^2}}$
$y = \arccos x$	$y' = \frac{-1}{\sqrt{1 - x^2}}$	$y = \arccos u$	$y' = \frac{-u'}{\sqrt{1 - u^2}}$
$y = \arctan x$	$y' = \frac{1}{1 + x^2}$	$y = \arctan u$	$y' = \frac{u'}{1 + u^2}$
Logarithmic derivative	**1)** $y = u^v$	**2)** $\ln y = \ln(u^v)$	**3)** $\ln y = v \ln u$
	4) $\frac{y'}{y} = v' \ln u + v \frac{u'}{u}$	**5)** $y' = y\left(v' \ln u + v \frac{u'}{u}\right)$	**6)** $y' = u^v\left(v' \ln u + v \frac{u'}{u}\right)$

Where: y, u, v are functions of x; a, k, n are constants.