



**ADDITIONAL RESOURCES:**

**DERIVATIVES OF ELEMENTARY FUNCTIONS**

This table lists some of the important derivatives of elementary functions.

Note that  $u = f(x)$ ,  $v = g(x)$ .

	<b>Function</b>	<b>d/dx</b>
1	C (constant)	$dc/dx = 0$
2	$u^n$	$nu^{n-1} du/dx$
3	$Cu$	$Cdu/dx$
4	$u+v$	$du/dx + dv/dx$
5	$uv$	$udv/dx + vdu/dx$ (Product rule)
6	$u/v$	$(vdu/dx - u dv/dx)/v^2$ (Quotient rule)
7	$a^u$	$(\ln a) a^u du/dx$
8	$e^u$	$e^u du/dx$
9	$\ln u$	$(1/u) du/dx$
10	$\text{Log}_a u$	$(1/\{\ln a\}u) du/dx$
11	$\sin u$	$\cos u du/dx$
12	$\cos u$	$-\sin u du/dx$
13	$\tan u$	$\sec^2 u du/dx$
14	$\cot u$	$-\text{cosec}^2 u du/dx$
15	$\text{cosec} u$	$-(\text{cosec} u)(\cot u) du/dx$
16	$\text{Sin}^{-1} u$	$1/(1-u^2)^{1/2} du/dx$
17	$\text{cos}^{-1} u$	$-1/(1-u^2)^{1/2} du/dx$
18	$\text{tan}^{-1} u$	$1/(1+u^2) du/dx$