

$f(x)$	$f'(x)$
$x^n$	$n x^{n-1}$
$\ln x$	$\frac{1}{x}$
$\log_a x$	$\left(\frac{1}{x}\right) \log_a e$
$e^x$	$e^x$
$a^x$	$a^x \log_e a$
$\sin x$	$\cos x$
$\cos x$	$-\sin x$
$\tan x$	$\sec^2 x$
$\sec x$	$\sec x \tan x$
$\operatorname{cosec} x$	$-\operatorname{cosec} x \cot x$
$\cot x$	$-\operatorname{cosec}^2 x$
$\sinh x$	$\cosh x$

$f(x)$	$f'(x)$
$\cosh x$	$\sinh x$
$\sin^{-1} x$	$\frac{1}{\sqrt{1-x^2}}$
$\cos^{-1} x$	$\frac{-1}{\sqrt{1-x^2}}$
$\tan^{-1} x$	$\frac{1}{1+x^2}$
$\operatorname{cosec}^{-1} x$	$-\frac{1}{x\sqrt{x^2-1}}$
$\sec^{-1} x$	$\frac{1}{x\sqrt{x^2-1}}$
$\cot^{-1} x$	$\frac{1}{1+x^2}$
$ x $	$\frac{x}{ x } (x \neq 0)$

If the function contains an expression of the form

1.  $a^2 - x^2$ , put  $x = a \sin t$  or  $x = a \cos t$
2.  $a^2 + x^2$ , put  $x = a \tan t$  or  $x = a \cot t$
3.  $x^2 - a^2$ , put  $x = a \sec t$  or  $x = a \operatorname{cosec} t$
4.  $\sqrt{\frac{a-x}{a+x}}$  or  $\sqrt{\frac{a+x}{a-x}}$ , put  $x = a \cos t$
5.  $a \cos x \pm b \sin x$ , put  $a = r \cos \theta$  and  $b = r \sin \theta$ ,  $r > 0$ .