DIFREÁIL (DIFFERENTIATION)		SUIMEÁIL (INTEGRATION)

DIFREÁIL (DIFFERENTIATION)

$f(x)$	$f'(x) \equiv \dfrac{d}{dx}[f(x)]$
x^n	nx^{n-1}
$\ln x$	$\dfrac{1}{x}$
$\cos x$	$-\sin x$
$\sin x$	$\cos x$
$\tan x$	$\sec^2 x$
$\sec x$	$\sec x \tan x$
$\operatorname{cosec} x$	$-\operatorname{cosec} x \cot x$
$\cot x$	$-\operatorname{cosec}^2 x$
e^x	e^x
e^{ax}	ae^{ax}
a^x	$a^x \ln a$
$\cos^{-1}\dfrac{x}{a}$	$-\dfrac{1}{\sqrt{a^2-x^2}}$
$\sin^{-1}\dfrac{x}{a}$	$\dfrac{1}{\sqrt{a^2-x^2}}$
$\tan^{-1}\dfrac{x}{a}$	$\dfrac{a}{a^2+x^2}$
$\sec^{-1}\dfrac{x}{a}$	$\dfrac{a}{x\sqrt{x^2-a^2}}$
$\operatorname{cosec}^{-1}\dfrac{x}{a}$	$-\dfrac{a}{x\sqrt{x^2-a^2}}$
$\cot^{-1}\dfrac{x}{a}$	$-\dfrac{a}{a^2+x^2}$
$\sinh x$	$\cosh x$
$\cosh x$	$\sinh x$
$\tanh x$	$\operatorname{sech}^2 x$
$\coth x$	$-\operatorname{cosech}^2 x$
$\operatorname{sech} x$	$-\operatorname{sech} x \tanh x$
$\operatorname{cosech} x$	$-\operatorname{cosech} x \coth x$
$\sinh^{-1} x$	$\dfrac{1}{\sqrt{x^2+1}}$
$\cosh^{-1} x$	$\dfrac{1}{\sqrt{x^2-1}}$
$\tanh^{-1} x$	$\dfrac{1}{1-x^2}$

SUIMEÁIL (INTEGRATION)

Glactar $a>0$ agus fágtar tairisigh na suimeála ar lár.

We take $a>0$ and omit constants of integration.

$f(x)$	$\displaystyle\int f(x)\,dx$
x^n $(n\neq -1)$	$\dfrac{x^{n+1}}{n+1}$
$\dfrac{1}{x}$	$\ln|x|$
$\cos x$	$\sin x$
$\sin x$	$-\cos x$
$\tan x$	$\ln|\sec x|$
$\sec x$	$\ln|\sec x + \tan x|$
$\operatorname{cosec} x$	$\ln\left|\tan\dfrac{x}{2}\right|$
$\cot x$	$\ln|\sin x|$
e^x	e^x
e^{ax}	$\dfrac{1}{a}e^{ax}$
a^x	$\dfrac{a^x}{\ln a}$
$\dfrac{1}{\sqrt{a^2+x^2}}$	$\ln\left|\dfrac{x+\sqrt{a^2+x^2}}{a}\right|$
$\dfrac{1}{\sqrt{a^2-x^2}}$	$\sin^{-1}\dfrac{x}{a}$
$\dfrac{1}{x^2+a^2}$	$\dfrac{1}{a}\tan^{-1}\dfrac{x}{a}$
$\dfrac{1}{x\sqrt{x^2-a^2}}$	$\dfrac{1}{a}\sec^{-1}\dfrac{x}{a}$
$\dfrac{1}{\sqrt{x^2-a^2}}$	$\ln\left|\dfrac{x+\sqrt{x^2-a^2}}{a}\right|$
$\dfrac{1}{a^2-x^2}$	$\dfrac{1}{2a}\ln\left|\dfrac{a+x}{a-x}\right|$