Integration [x in radians]

standard results:

y	$\int y\,dx$	$+c$ in each case
x^n	$\frac{x^{n+1}}{n+1}$	$n \neq -1$
$\frac{1}{x}$	$\ln\lvert x\rvert$	
e^x	e^x	
$\sin x$	$-\cos x$	
$\cos x$	$\sin x$	
$\sec^2 x$	$\tan x$	
$\operatorname{cosec}^2 x$	$-\cot x$	
$\operatorname{cosec} x \cot x$	$-\operatorname{cosec} x$	
$\sec x \tan x$	$\sec x$	
$\tan x$	$\ln\lvert\sec x\rvert$	
$\cot x$	$\ln\lvert\sin x\rvert$	
$\sec x$	$\ln\lvert\sec x + \tan x\rvert$	
$\operatorname{cosec} x$	$-\ln\lvert\operatorname{cosec} x + \cot x\rvert$	

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Integration by Recognition $\int \lambda f'(x)\,dx = \lambda f(x) + c$

reversing the Chain Rule: $\int \lambda f'(g(x))g'(x)\,dx = \lambda f(g(x)) + c$

special cases:

(1) the "$\frac{1}{a}$" rule $\int f'(ax+b)\,dx = \frac{1}{a} f(ax+b) + c$

in particular:

$$\int e^{kx}\,dx = \frac{1}{k}e^{kx} + c$$

$$\int \sin kx\,dx = -\frac{1}{k}\cos kx + c \quad \text{(etc)}$$

$$\int (ax+b)^n\,dx = \frac{1}{n+1}\cdot\frac{1}{a}(ax+b)^{n+1} + c \quad (n \neq -1)$$

$$\int \frac{1}{ax+b}\,dx = \frac{1}{a}\ln\lvert ax+b\rvert + c$$

(2)
- $\int f'(x)\,e^{f(x)}\,dx = e^{f(x)} + c$
- $\int \frac{f'(x)}{f(x)}\,dx = \ln\lvert f(x)\rvert + c$
- $\int f'(x)\sin(f(x))\,dx = -\cos(f(x)) + c$ (etc)
- $\int \sin x \cos^n x\,dx = -\frac{1}{n+1}\cos^{n+1} x + c$ $\Big\}(n \neq -1)$
- $\int \cos x \sin^n x\,dx = \frac{1}{n+1}\sin^{n+1} x + c$
- $\int f'(x)[f(x)]^n\,dx = \frac{1}{n+1}[f(x)]^{n+1} + c$