

Source: [KBhMATH401SubIndex](#)

# 1 | Intergration

Antiderivatives table

Function	Antidervative
$x^n$	$\frac{x^{n+1}}{n+1} + c, x \neq -1$
$a f(x)$	$a * (f(x)dx)$
$\frac{1}{x}$	$\ln(\ x\ )$
$\sin(at)$	$-\frac{\cos(t)}{a}$
$\cos(at)$	$\frac{\sin(t)}{a}$
$e^a$	$e^a$
$\frac{1}{1+(ax)^2}$	$\tan^{-1}(ax)$
$\frac{a}{\sqrt{k^2-(ax)^2}}$	$\sin^{-1}(\frac{ax}{k})$
$\frac{-1}{\sqrt{k^2-(ax)^2}}$	$\cos^{-1}(\frac{ax}{k})$
$\int f(x)g'(x)dx$	$f(x)g(x) + \int f'(x)g(x)dx$

## 1.1 | Useful thing

- Intergration by Parts (reverse product rule)
- u-Substitution (reverse chain rule)
- Compleeting the Square + arcsin/arctan
- Long divide, then intergrate