Fórmulas de Derivadas.

Sean f, g funciones; k, a constantes y n número entero.($n \in \mathrm{Z}^*$)

Función.	**Derivada.**
$f(x) = k.$	$f'(x) = 0.$
$f(x) = x.$	$f'(x) = 1.$
$f(x) = g(x) \pm h(x).$	$f'(x) = g'(x) \pm h'(x).$
$f(x) = k \cdot g(x).$	$f'(x) = k \cdot g'(x).$
$y = g(x) \cdot f(x).$	$y' = g(x) \cdot f'(x) + f(x) \cdot g'(x).$
$y = [g(x)]^n.$	$y' = n \cdot [g(x)]^{n-1} \cdot g'(x).$
$y = x^n.$	$y' = n \cdot x^{n-1}.$
$y = \dfrac{f(x)}{g(x)}.$	$y' = \dfrac{g(x) \cdot f'(x) - f(x) \cdot g'(x)}{[g(x)]^2}.$
$y = \cos f(x).$	$y' = -f'(x) \cdot \sin f(x).$
$y = \sin f(x).$	$y' = f'(x) \cdot \cos f(x).$
$y = \tan f(x).$	$y' = f'(x) \cdot \sec^2 f(x).$
$y = \cot f(x).$	$y' = -f'(x) \cdot \csc^2 f(x).$
$y = \sec f(x).$	$y' = f'(x) \cdot \sec f(x) \cdot \tan f(x).$
$y = \csc f(x).$	$y' = -f'(x) \cdot \csc f(x) \cdot \cot f(x).$
$y = \ln(f(x)).$	$y' = \dfrac{f'(x)}{f(x)}.$
$y = \log f(x).$	$y' = \dfrac{\log e \cdot f'(x)}{f(x)}.$
$y = e^{f(x)}.$	$y' = f'(x) \cdot e^{f(x)}.$
$y = a^{f(x)}.$	$y' = a^{f(x)} \cdot \ln a \cdot f'(x).$
$y = f(x)^{g(x)}$	$y' = f(x)^{g(x)} \left[g'(x) \cdot \ln f(x) + \dfrac{g(x) \cdot f'(x)}{f(x)} \right].$

Tabla de Integrales.

Sean u,v funciones y $a =$ cte.

(a) $\int (du \pm dv) = \int du \pm \int dv$	(m) $\int \csc v \cot v dv = -\csc v + C$
(b) $\int a dv = a \int dv$	(n) $\int \tan v dv = -\ln \cos v + C = \ln \sec v + C$
(c) $\int dx = x + C$	(o) $\int \cot v dv = \ln \sin v + C$
(d) $\displaystyle\int v^n dv = \frac{v^{n+1}}{n+1} + C, \quad n \neq -1$	(p) $\int \sec v dv = \ln(\sec v + \tan v) + C$
(e) $\displaystyle\int \frac{dv}{v} = \ln v + C$	(q) $\int \csc v dv = \ln(\csc v - \cot v) + C$
(f) $\displaystyle\int a^v dv = \frac{a^v}{\ln a} + C$	(r) $\displaystyle\int \frac{dv}{v^2 + a^2} = \frac{1}{a} \arctan \frac{v}{a} + C$
(g) $\displaystyle\int e^v dv = e^v + C$	(s) $\displaystyle\int \frac{dv}{v^2 - a^2} = \frac{1}{2a} \ln \frac{v-a}{v+a} + C \quad (v^2 > a^2)$
(h) $\int \sin v dv = -\cos v + C$	(t) $\displaystyle\int \frac{dv}{a^2 - v^2} = \frac{1}{2a} \ln \frac{a+v}{a-v} + C \quad (v^2 < a^2)$
(i) $\int \cos v dv = \sin v + C$	(u) $\displaystyle\int \frac{dv}{\sqrt{a^2 - v^2}} = \arcsin \frac{v}{a} + C$
(j) $\displaystyle\int \sec^2 v dv = \tan v + C$	(v) $\displaystyle\int \frac{dv}{\sqrt{v^2 \pm a^2}} = \ln(v + \sqrt{v^2 \pm a^2}) + C$
(k) $\int \csc^2 v dv = -\cot v + C$	(w) $\displaystyle\int \sqrt{a^2 - v^2} dv = \frac{v}{2}\sqrt{a^2 - v^2} + \frac{a^2}{2} \arcsin \frac{v}{a} + C$
(l) $\int \sec v \tan v dv = \sec v + C$	(x) $\displaystyle\int \sqrt{v^2 \pm a^2} dv = \frac{v}{2}\sqrt{v^2 \pm a^2} \pm \frac{a^2}{2} \ln(v + \sqrt{v^2 \pm a^2}) + C$