x^2

$F'(x) = 2x$

$\int \frac{2}{2} x^1 \, dx$

$= x^2$

TABLA DE INTEGRALES INMEDIATAS

TIPOS	INTEGRAL	EJEMPLO
	$\int dx = x$	$\int dx = x$
	$\int \frac{a}{a} dx = \frac{a}{a}$	$\int 3dx = 3x$
Potencial	$\int x^n dx = \frac{x^{n+1}}{n+1}$	$\int 5.x^3 dx = \frac{5.x^{3+1}}{3+1} = \frac{5.x^4}{4}$
	$\int u'.u^n dx = \frac{u^{n+1}}{n+1}$	$\int 2(2x+5)^4 dx = \frac{2.(2x+5)^5}{5}$
Logarítmico	$\int \frac{1}{x} dx = \ln x$	$\int \frac{4}{x} dx = 4.\ln x$
	$\int \frac{u'}{u} dx = \ln u$	$\int \frac{2x}{x^2+5} dx = \ln(x^2+5)$
Exponencial	$\int e^x dx = e^x$	$\int 2.e^x dx = 2.e^x$
	$\int u'.e^u dx = e^u$	$\int 5.e^{5x+1} dx = e^{5x+1}$
	$\int a^x dx = \frac{a^x}{\ln a}$	$\int 3.5^x dx = \frac{3.5^x}{\ln 5}$
	$\int u'.a^u dx = \frac{a^u}{\ln a}$	$\int 2x.4^{x^2} dx = \frac{4^{x^2}}{\ln 4}$
Seno	$\int \operatorname{sen} x \, dx = -\cos x$	$\int 7.\operatorname{sen} x \, dx = -7.\cos x$
	$\int u'.\operatorname{sen} u \, dx = -\cos u$	$\int 6.\operatorname{sen} 6x \, dx = -\cos 6x$
Coseno	$\int \cos x \, dx = \operatorname{sen} x$	$\int 6.\cos x \, dx = 6.\operatorname{sen} x$
	$\int u'.\cos u \, dx = \operatorname{sen} u$	$\int 6x.\cos 3x^2 \, dx = \operatorname{sen} 3x^2$
Tangente	$\int \frac{1}{\cos^2 x} dx = tgx$	$\int \frac{3}{\cos^2 x} dx = 3tgx$
	$\int (1+tg^2 x) dx = tgx$	$\int 5(1+tg^2 x) dx = 5tgx$
	$\int \frac{u'}{\cos^2 u} dx = tgu$	$\int \frac{2}{\cos^2(2x)} dx = tg(2x)$
Cotangente	$\int \frac{1}{\operatorname{sen}^2 x} dx = -cotgx$	$\int 2(1+tg^2 x) dx = -2cotgx$
	$\int \frac{u'}{\operatorname{sen}^2 u} dx = -cotgu$	$\int \frac{3x^2}{\operatorname{sen}^2 x^3} dx = -cotgx^3$
Arcoseno Arcocoseno	$\int \frac{1}{\sqrt{1-x^2}} dx = arcsenx$	$\int \frac{3}{\sqrt{1-x^2}} dx = 3.arcsenx$
	$\int \frac{u'}{\sqrt{1-u^2}} dx = arcsenu$	$\int \frac{3}{\sqrt{1-x^2}} dx = 3.arcsenx$
Arcotangente	$\int \frac{1}{1+x^2} dx = arctgx$	$\int \frac{8}{1+x^2} dx = 8.arctgx$
	$\int \frac{u'}{1+u^2} dx = arctgu$	$\int \frac{8}{1+x^2} dx = 8.arctgx$

Integrales

$$\int_{-\infty}^{\infty} (5x^4 - 6x^2 + 3)dx$$

$\int u.dv = u.v - \int v \, du$

$\frac{x-1}{\sqrt{x+4}}$

$\int 1 = 1x$

$\int e \, dx$

$= e x$

$\int e^x dx$

$= e^x$

$= \int_0^1 (5x^4 - 6x^2 + 3) \, dx$

$= \int_0^1 5x^4 dx - \int_0^1 6x^2 dx + \int_0^1 3 \, dx$

$= \frac{\cancel{5}x^5}{\cancel{5}} - \frac{\cancel{6}x^3}{\cancel{3}} + 3x + C$

$= x^5 - 2x^3 + 3x + C$

$5x^4 - 6x^2 + 3$

$1^5 \quad 0^5 \qquad 2 \cdot 1^3 \quad 2 \cdot 0^3 \qquad 3 \cdot 1 \quad 3 \cdot 0$

$= \Big|_0^1 (1-0) - \Big|_0^1 (2-0) + \Big|_0^1 (3-0)$

$= 1 - 2 + 3 = 2$

$\int \frac{12x^4 + 8x^6 - 4x^2}{2x^2}$

$\frac{a}{x} + \frac{b}{x}$

$= \frac{a+b}{x}$

$\int \frac{12x^4}{2x^2} + \frac{8x^6}{2x^2} - \frac{4x^2}{2x^2}$

$\int 6x^2 + 4x^4 - 2$

$= \frac{6x^3}{3} + \frac{4x^5}{5} - 2x$

$= \frac{4x^5}{5} + 2x^3 - 2x + c$