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Formulas de integración

(1) $\int adx = ax + C$

(2) $\int af(x)dx = a\int f(x)dx$

(3) $\int e^x dx = e^x + C$

(4) $\int (f+g)dx = \int fdx + \int gdx$

(5) $\int fdg = fg - \int gdf$

(6) $\int x^n dx = \dfrac{x^{n+1}}{n+1} + C; n \neq 1$

(7) $\int x^{-1}dx = \ln|x| + C$

(8) $\int e^x dx = e^x + C$

(9) $\int a^x dx = \frac{a^x}{lna} + C$

(10) $\int xa^x dx = \frac{a^x}{lna} \cdot \left(x - \frac{1}{\ln a}\right) + C$

(11) $\int xe^x dx = e^x \cdot (x-1) + C$

(12) $\int \ln x dx = x \cdot \ln x - x + C = x \cdot (\ln x - 1) + C$

(13) $\int x \ln x dx = \frac{x^2}{4} \cdot (2\ln x - 1) + C$

(14) $\int senudu = -\cos u + C$

(15) $\int \cos udx = senu + C$

(16) $\int \sec u \tan udu = \sec u + C$

(17) $\int \csc u \cot u dx = -\csc u + C$

(18) $\int \tan u du = -\ln|\cos u| + C = \ln|\sec u| + C$

(19) $\int \cot u du = \ln|senu| + C = -\ln|\csc u| + C$

(20) $\int \sec u du = \ln|\sec u + \tan u| + C$

(21) $\int \csc u dx = \ln|\csc u - \cot u| + C$

(22) $\int sen^2 x dx = \frac{x}{2} - \frac{1}{4} sen 2x + C$

(23) $\int \cos^2 x dx = \frac{x}{2} + \frac{1}{4} sen 2x + C$

(24) $\int \tan^2 x dx = \tan x - x + C$

(25) $\int \cot^2 x dx = -\cot x - x + C$

(26) $\int \sec^2 x dx = \tan x + C$

(27) $\int \csc^2 x dx = -\cot x + C$

(28) $\int x sen x dx = sen x - x \cos x + C$

(29) $\int x \cos x dx = \cos x + x \sin x + C$

(30) $\int arcsen\, x dx = x sen x + \sqrt{1 - x^2} + C$

(31) $\int \arccos x dx = x \cos x - \sqrt{1 - x^2} + C$

(32) $\int \arctan x dx = x \tan x - \ln(\sqrt{1 + x^2}) + C$

(33) $\int arccot\, x dx = x \cot x + \ln(\sqrt{1 + x^2}) + C$

(34) $\int arcsec\, x dx = x \sec x - \ln(x + \sqrt{x^2 - 1}) + C = x \sec x - arccosh\, x + C$

(35) $\int arccsc\, x dx = x \csc x + \ln(x + \sqrt{x^2 - 1}) + C = x \sec x + arccosh\, x + C$

(36) $\int senh\, x dx = \cosh x + C$

(37) $\int \cosh x dx = senh\, x + C$

(38) $\int sech^2 x dx = \tanh x + C$

(39) $\int csch^2 x dx = -\coth x + C$

(40) $\int sechx \tanh x dx = -sech\, x + C$

(41) $\int cschx \coth x dx = -csch\, x + C$

(42) $\int \tanh x dx = \ln(\cosh x) + C$

(43) $\int \coth x dx = \ln |senhx| + C$

(44) $\int sech\, x dx = \arctan(senh\, x) + C$

(45) $\int csch\, x dx = arccoth(\cosh x) + C = \ln \tanh(\frac{x}{2}) + C$

(46) $\int \frac{1}{x^2+a^2} dx = \frac{1}{a} \arctan \frac{x}{a} + C = -\frac{1}{a} arccot \frac{x}{a} + C$

(47) $\int \frac{1}{x^2-a^2} dx = \frac{1}{2a} \ln(\frac{x-a}{x+a}) + C; x^2 > a^2$

(48) $\int \frac{1}{a^2-x^2} dx = \frac{1}{2a} \ln(\frac{a+x}{a-x}) + C; x^2 < a^2$

(49) $\int \frac{1}{\sqrt{a^2-x^2}} dx = sen \frac{x}{a} + C = -cos \frac{x}{a} + C$

(50) $\int \frac{1}{\sqrt{x^2 \pm a^2}} dx = ln(x + \sqrt{x^2 \pm a^2}) + C$

(51) $\int \frac{1}{x\sqrt{a^2 \pm x^2}} dx = \frac{1}{a} ln \frac{x}{a + \sqrt{a^2 \pm x^2}} + C$

(52) $\int \frac{1}{x\sqrt{x^2-a^2}} dx = \frac{1}{a} \arccos \frac{a}{x} = -\frac{1}{a} arcsec \dfrac{x}{a} + C$

(53) $\int \sqrt{a^2 - x^2} dx = \frac{x}{2} \sqrt{a^2 - x^2} + \frac{a^2}{2} arcsen \frac{x}{a} + C$

(54) $\int \sqrt{x^2 \pm a^2} dx = \frac{x}{2} \sqrt{x^2 \pm a^2} \pm \frac{a^2}{2} ln(x + \sqrt{x^2 \pm a^2}) + C$

(55) $\int e^{ax} senbx dx = \frac{e^{ax}(asenbx - bcosbx)}{a^2+b^2} + C$

(56) $\int e^{ax} cosbx dx = \frac{e^{ax}(acosbx + bsenbx)}{a^2+b^2} + C$

Propiedades de integrales definidas

(1) $\int_a^b (f(x) \pm g(x))dx = \int_a^b f(x)dx \pm \int_a^b g(x)dx$
(2) $\int_a^b C \cdot f(x)dx = C \cdot \int_a^b f(x)dx$
(3) $\int_a^b f(x)dx = \int_a^c f(x)dx + \int_c^b f(x)dx$
(4) $\int_a^b f(x)dx = -\int_b^a f(x)dx$
(5) $\int_a^a f(x)dx = 0$

NOTA: Se encuentra en revision este archivo, es posible que exista errores ... Estamos trabajando para Ud!

Modificado: 16/*Octubre*/2025 Por: v1rg1l10