CTLSC
Escuela de Ciencias Naturales y Exactas
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Fórmulas básicas de integración

1. $\int \frac{1}{x} dx = \ln|x| + c$
2. $\int k\ f(x)\,dx = k\int f(x)\,dx$
3. $\int dx = x + c$
4. $\int [f(x) \pm g(x)]dx = \int f(x)\,dx \pm \int g(x)\,dx$
5. $\int x^n dx = \frac{x^{n+1}}{n+1} + c,\ \ con\ \ n \neq -1$
6. $\int e^x dx = e^x + c$
7. $\int sen\,x\ dx = -\cos x + c$
8. $\int \cos x\ dx = sen\,x + c$
9. $\int \sec x \tan x\ dx = \sec x + c$
10. $\int \sec^2 x\ \ dx = \tan x + c$
11. $\int \frac{1}{1+x^2} dx = acr\tan x + c$
12. $\int \frac{1}{\sqrt{1-x^2}} dx = acrsenx + c$
13. $\int \frac{1}{x\sqrt{x^2-1}} dx = acr\sec|x| + c$
14. $\int a^x dx = \frac{a^x}{\ln a} + c$
15. $\int e^{ax} dx = \frac{e^{ax}}{a} + c$
16. $\int sen\,(ax)\ dx = -\frac{\cos(ax)}{a} + c$
17. $\int \cos(ax)\ dx = \frac{sen(ax)}{a} + c$
18. $\int \csc^2 x\ dx = -\cot x + c$
19. $\int \csc x \cot x\ dx = -\csc x + c$
20. $\int \tan x\ dx = -\ln|\cos x| + c$
21. $\int \cot x\ dx = \ln|\,senx\,| + c$
22. $\int \sec x\ dx = \ln|\sec x + \tan x| + c$
23. $\int \csc x\ dx = \ln|\csc x - \cot x| + c$
24. $\int \frac{1}{a^2+x^2} dx = \frac{1}{a}\arctan\left(\frac{x}{a}\right) + c$
25. $\int \frac{1}{\sqrt{a^2-x^2}} dx = \frac{1}{a} arcsen\left(\frac{x}{a}\right) + c$
26. $\int \frac{1}{x\sqrt{x^2-a^2}} dx = \frac{1}{a} arc\sec\left(\frac{x}{a}\right) + c$
27. $\int \frac{k}{ax+b} dx = \frac{k}{a}\ln|ax+b| + c$
28. $\int (ax+b)^n dx = \frac{(ax+b)^{n+1}}{a(n+1)} + c$

Algunas identidades trigonométricas básicas:

1. $sen^2 u = 1 - \cos^2 u$
2. $\cos^2 u = 1 - sen^2 u$
3. $\sec^2 u = 1 + \tan^2 u$
4. $\tan^2 u = \sec^2 u - 1$
5. $\csc^2 u = 1 + \cot^2 u$
6. $\cot^2 u = \csc^2 u - 1$
7. $sen^2 u = \frac{1 - \cos 2u}{2}$
8. $\cos^2 u = \frac{1 + \cos 2u}{2}$
9. $sen(2u) = 2sen(u)\cos(u)$
10. $\cos(2u) = 2\cos^2(u) - 1$

$= 1 - 2sen^2(u)$

$= \cos^2(u) - sen^2(u)$