Tabla de derivadas

1. $D_x(u^n) = nu^{n-1} D_x u$
2. $D_x(u+v) = D_x u + D_x v$
3. $D_x(uv) = uD_x v + vD_x u$
4. $D_x\left(\frac{u}{v}\right) = \frac{vD_x u - uD_x v}{v^2}$
5. $D_x(e^u) = e^u D_x u$
6. $D_x(a^u) = a^u \ln a D_x u$
7. $D_x(\ln u) = \frac{1}{u} D_x u$
8. $D_x(senu) = \cos u \, D_x u$
9. $D_x(\cos u) = -senu \, D_x u$
10. $D_x(\tan u) = \sec^2 u \, D_x u$
11. $D_x(\cot u) = -\csc^2 u \, D_x u$
12. $D_x(\sec u) = \sec u \tan u \, D_x u$
13. $D_x(\csc u) = -\csc u \cot u \, D_x u$
14. $D_x(arcsenu) = \frac{1}{\sqrt{1-u^2}} D_x u$

Tabla de integrales

Formas elementales

1. $\int du = u + c$
2. $\int a \, du = au + c$
3. $\int [f(u) + g(u)] du = \int f(u) du + \int g(u) du$
4. $\int u^n \, du = \frac{u^{n+1}}{n+1} + c \qquad (n \neq 1)$
5. $\int \frac{du}{u} = \ln|u| + c$

Formas que contienen $a^2 \pm u^2$

6. $\displaystyle\int \frac{du}{a^2+u^2} = \frac{1}{a}\arctan\frac{u}{a} + c$

7. $\displaystyle\int \frac{du}{a^2-u^2} = \frac{1}{2a}\ln\left|\frac{u+a}{u-a}\right| + c = \begin{cases} \frac{1}{a}\operatorname{arctanh}\frac{u}{a} + c & si \ |u| < a \\ \frac{1}{a}\operatorname{arccoth}\frac{u}{a} + c & si \ |u| > a \end{cases}$

8. $\displaystyle\int \frac{du}{u^2-a^2} = \frac{1}{2a}\ln\left|\frac{u-a}{u+a}\right| + c = \begin{cases} -\frac{1}{a}\operatorname{arctanh}\frac{u}{a} + c & si \ |u| < a \\ -\frac{1}{a}\operatorname{arccoth}\frac{u}{a} + c & si \ |u| > a \end{cases}$

9. $\displaystyle\int \frac{du}{\sqrt{u^2 \pm a^2}} = \ln\left|u + \sqrt{u^2 \pm a^2}\right| + c$

10. $\displaystyle\int \sqrt{u^2 \pm a^2}\, du = \frac{u}{2}\sqrt{u^2 \pm a^2} \pm \frac{a^2}{2}\ln\left|u + \sqrt{u^2 \pm a^2}\right| + c$

11. $\displaystyle\int u^2\sqrt{u^2 \pm a^2}\, du = \frac{u}{8}\left(2u^2 \pm a^2\right)\sqrt{u^2 \pm a^2} - \frac{a^4}{8}\ln\left|u + \sqrt{u^2 \pm a^2}\right| + c$

12. $\displaystyle\int \frac{\sqrt{u^2+a^2}\, du}{u} = \sqrt{u^2+a^2} - a\ln\left|\frac{a + \sqrt{u^2+a^2}}{u}\right| + c$

13. $\displaystyle\int \frac{\sqrt{u^2-a^2}\, du}{u} = \sqrt{u^2-a^2} - a\,\operatorname{arcsec}\frac{u}{a} + c$

14. $\displaystyle\int \frac{\sqrt{u^2 \pm a^2}\, du}{u^2} = -\frac{\sqrt{u^2 \pm a^2}}{u} + \ln\left|u + \sqrt{u^2 \pm a^2}\right| + c$

Formas que contienen $\sqrt{a^2-u^2}$

15. $\displaystyle\int \frac{du}{\sqrt{a^2-u^2}} = \operatorname{arcsen}\frac{u}{a} + c$

16. $\displaystyle\int \sqrt{a^2-u^2}\, du = \frac{u}{2}\sqrt{a^2-u^2} + \frac{a^2}{2}\operatorname{arcsen}\frac{u}{a} + c$

17. $\displaystyle\int u^2\sqrt{a^2-u^2}\, du = \frac{u}{8}\left(2u^2 - a^2\right)\sqrt{a^2-u^2} + \frac{a^4}{8}\operatorname{arcsen}\frac{u}{a} + c$

Formas que contienen funciones trigonométricas

18. $\int senu\ du = -\cos u + c$
19. $\int \cos u\ du = senu + c$
20. $\int \tan u\ du = \ln|\sec u| + c$
21. $\int \cot u\ du = \ln|senu| + c$
22. $\int \sec u\ du = \ln|\sec u + \tan u| + c = \ln\left|\tan\left(\frac{\pi}{4} + \frac{1}{2}u\right)\right| + c$
23. $\int \csc u\ du = \ln|\csc u - \cot u| + c = \ln\left|\tan \frac{1}{2}u\right| + c$
24. $\int \sec^2 u\ du = \tan u + c$
25. $\int \csc^2 u\ du = -\cot u + c$
26. $\int \sec u \tan u\ du = \sec u + c$
27. $\int \csc u \cot u\ du = -\csc u + c$
28. $\int sen^2 u\ du = \frac{1}{2}u - \frac{1}{4}sen2u + c$
29. $\int \cos^2 u\ du = \frac{1}{2}u + \frac{1}{4}sen2u + c$
30. $\int \tan^2 u\ du = \tan u - u + c$
31. $\int \cot^2 u\ du = -\cot u - u + c$
32. $\int sen^n u\ du = -\frac{1}{n}sen^{n-1} u \cos u + \frac{n-1}{n}\int sen^{n-2} u\ du$
33. $\int \cos^n u\ du = \frac{1}{n}\cos^{n-1} u\, senu + \frac{n-1}{n}\int \cos^{n-2} u\ du$
34. $\int \tan^n u\ du = \frac{1}{n-1}\tan^{n-1} u - \int \tan^{n-2} u\ du$
35. $\int \cot^n u\ du = -\frac{1}{n-1}\cot^{n-1} u - \int \cot^{n-2} u\ du$
36. $\int \sec^n u\ du = \frac{1}{n-1}\sec^{n-2} u \tan u + \frac{n-2}{n-1}\int \sec^{n-2} u\ du$
37. $\int \csc^n u\ du = -\frac{1}{n-1}\csc^{n-2} u \cot u + \frac{n-2}{n-1}\int \csc^{n-2} u\ du$

Formas que contienen funciones exponenciales y logarítmicas

38. $\int e^u\ du = e^u + c$
39. $\int a^u\ du = \frac{a^u}{\ln a} + c$

40. $\int \ln u \, du = u \ln u - u + c$

Relaciones entre las razones trigonométricas

$Sen\ \alpha = \dfrac{1}{Csc\ \alpha}$ $\quad$ $\text{Csc}\ \alpha = \dfrac{1}{\text{Sen}\ \alpha}$ $\quad$ $\text{Sec}\ \alpha = \dfrac{1}{\text{Cos}\ \alpha}$

$\text{Cos}\ \alpha = \dfrac{1}{\text{Sec}\ \alpha}$ $\quad$ $\text{Tg}\ \alpha = \dfrac{1}{Ctg\ \alpha}$ $\quad$ $\text{Ctg}\ \alpha = \dfrac{1}{\text{Tg}\ \alpha}$

Identidades fundamentales:

$Sen^2\ \alpha + Cos^2\ \alpha = 1$ $\quad$ $\text{Sen}^2\ \alpha = 1 - Cos^2\ \alpha$ $\quad$ $\text{Cos}^2\ \alpha = 1 - Sen^2\ \alpha$

$Tg^2\ \alpha + 1 = Sec^2\ \alpha$ $\quad$ $\text{Tg}^2\ \alpha = Sec^2\ \alpha - 1$ $\quad$ $\text{Tg}\ \alpha = \dfrac{\text{Sen}\ \alpha}{\text{Cos}\ \alpha}$ $\quad$ $\text{Sen}\ \alpha = \text{Cos}\ \alpha . \text{Tg}\ \alpha$

$Ctg^2\ \alpha + 1 = Csc^2\ \alpha$ $\quad$ $\text{Ctg}^2\ \alpha = Csc^2\ \alpha - 1$ $\quad$ $\text{Ctg}\ \alpha = \dfrac{\text{Cos}\ \alpha}{\text{Sen}\ \alpha}$ $\quad$ $\text{Cos}\ \alpha = \text{Sen}\ \alpha . \text{Ctg}\ \alpha$

Razones trigonométricas del ángulo doble:

$\text{Sen}\ 2\ \alpha = 2\ \text{Sen}\ \alpha\ .\ \text{Cos}\ \alpha$ $\quad$ $Tg\ 2\alpha = \dfrac{2Tg\ \alpha}{1 - Tg^2 \alpha}$

$$Cos\ 2\alpha = 2Cos^2\ \alpha - 1 = 1 - 2Sen^2\ \alpha = Cos^2\ \alpha - Sen^2\ \alpha$$