Fórmulas básicas de integración

1. $\int 0\,dx = C,$
2. $\int a\,dx = ax + C,$
3. $\int x^n\,dx = \dfrac{1}{n+1}\,x^{n+1} + C, \qquad n \in I\!N.$
4. $\int \cos x\,dx = \operatorname{sen} x + C.$
5. $\int \operatorname{sen} x\,dx = -\cos x + C.$
6. $\int \sec^2 x\,dx = \tan x + C.$
7. $\int \operatorname{cosec}^2 x\,dx = -\operatorname{ctg} x + C.$
8. $\int \dfrac{1}{x}\,dx = \ln|x| + C.$
9. $\int e^x\,dx = e^x + C,$
10. $\int \dfrac{1}{\sqrt{1-x^2}}\,dx = \operatorname{arc\ sen} x + C.$
11. $\int \dfrac{-1}{\sqrt{1-x^2}}\,dx = \operatorname{arccos}\ x + C.$
12. $\int \dfrac{1}{1+x^2}\,dx = \operatorname{arc\ tan} x + C.$
13. $\int \dfrac{-1}{1+x^2}\,dx = \operatorname{arc\ cotan} x + C.$
14. $\int x^a\,dx = \dfrac{1}{a+1}\,x^{a+1} + C,$ si $a \neq -1$ y $x > 0.$
15. $\int a^x\,dx = \dfrac{a^x}{\ln a} + C, \qquad a > 0.$

16. **Las integrales de las funciones hiperbólicas**

$$\begin{aligned}
\int \text{ senh } x\,dx &= \cosh x \\
\int \cosh x\,dx &= \text{ senh } x \\
\int \frac{1}{senh^2 x}\,dx &= -\coth x \\
\int \frac{1}{\cos h^2 x}\,dx &= \tanh x \\
\int \frac{1}{\sqrt{1+x^2}}\,dx &= \text{ arc senh } x = \ln(x+\sqrt{1+x^2}) \\
\int \frac{1}{\sqrt{x^2-1}}\,dx &= arc\cosh x = \ln(x \pm \sqrt{x^2-1}) \quad |x|>1; \\
\int \frac{1}{1-x^2} &= \begin{cases} arc\tanh x = \dfrac{1}{2}\ln\dfrac{1+x}{1-x}; & |x|<1 \\ arc\coth x = \dfrac{1}{2}\ln\dfrac{x+1}{x-1}; & |x|>1. \end{cases}
\end{aligned}$$