

Tabela de Integrais

$$1. \int dx = x + c$$

$$2. \int x^m dx = \frac{x^{m+1}}{m+1} + c \quad (m \neq -1)$$

$$3. \int \frac{dx}{x} = \ln|x| + c$$

$$4. \int e^x dx = e^x + c$$

$$5. \int a^x dx = \frac{a^x}{\ln(a)} + c$$

$$6. \int \operatorname{sen}(x) dx = -\cos(x) + c$$

$$7. \int \cos(x) dx = \operatorname{sen}(x) + c$$

$$8. \int \sec^2(x) dx = \operatorname{tg}(x) + c$$

$$9. \int \operatorname{cosec}^2(x) dx = -\operatorname{cotg}(x) + c$$

$$10. \int \sec(x) \operatorname{tg}(x) dx = \sec(x) + c$$

$$11. \int \operatorname{cosec}(x) \operatorname{cotg}(x) dx = -\operatorname{cosec}(x) + c$$

$$12. \int \frac{dx}{1+x^2} = \operatorname{arctg}(x) + c$$

$$13. \int \frac{dx}{a^2+x^2} = \frac{1}{a} \operatorname{arctg}\left(\frac{x}{a}\right) + c$$

$$14. \int \frac{dx}{\sqrt{1-x^2}} = \operatorname{arcsen}(x) + c$$

$$15. \int \frac{dx}{\sqrt{a^2-x^2}} = \operatorname{arcsen}\left(\frac{x}{a}\right) + c$$

$$16. \int \frac{dx}{x\sqrt{x^2-1}} = \operatorname{arcsec}(x) + c$$

$$17. \int \frac{dx}{\sqrt{x^2+a}} = \ln|x + \sqrt{x^2+a}| + c$$

$$18. \int \frac{dx}{x^2-a^2} = \frac{1}{2a} \ln \left| \frac{a-x}{a+x} \right| + c$$

$$19. \int \operatorname{sen}^2 x dx = \frac{1}{2}(x - \operatorname{sen}x \cos x) + c$$

$$20. \int \cos^2 x dx = \frac{1}{2}(x + \operatorname{sen}x \cos x) + c$$

$$\Gamma(\alpha) = \int_0^{+\infty} x^{\alpha-1} e^{-x} dx$$

$$\beta(m, n) = \int_0^1 x^{m-1} (1-x)^{n-1} dx$$

$$\beta(m, n) = 2 \int_0^{\pi/2} (\operatorname{sen} t)^{2m-1} (\cos t)^{2n-1} dt$$

$$\beta(m, n) = \frac{\Gamma(m)\Gamma(n)}{\Gamma(m+n)}$$