ECUACIONES DIFERENCIALES

Formulario básico de integrales

1. $\int x \operatorname{sen} ax \, dx = \dfrac{\operatorname{sen} ax}{a^2} - \dfrac{x \cos ax}{a} + C$

2. $\int x^2 \operatorname{sen} ax \, dx = \dfrac{2x}{a^2} \operatorname{sen} ax + \left(\dfrac{2}{a^3} - \dfrac{x^2}{a} \right) \cos ax + C$

3. $\int x \cos ax \, dx = \dfrac{\cos ax}{a^2} - \dfrac{x \operatorname{sen} ax}{a} + C$

4. $\int x^2 \cos ax \, dx = \dfrac{2x}{a^2} \cos ax + \left(\dfrac{x^2}{a} - \dfrac{2}{a^3} \right) \operatorname{sen} ax + C$

5. $\int x^n \operatorname{sen} ax \, dx = -\dfrac{x^n}{a} \cos ax + \dfrac{n}{a} \int x^{n-1} \cos ax \, dx + C$

6. $\int x^n \cos ax \, dx = \dfrac{x^n}{a} \operatorname{sen} ax - \dfrac{n}{a} \int x^{n-1} \operatorname{sen} ax \, dx + C$

7. $\int \operatorname{sen} au \operatorname{sen} bu \, du = \dfrac{\operatorname{sen}(a-b)u}{2(a-b)} - \dfrac{\operatorname{sen}(a+b)u}{2(a+b)} + C$

8. $\int \operatorname{sen} au \cos bu \, du = -\dfrac{\cos(a-b)u}{2(a-b)} - \dfrac{\cos(a+b)u}{2(a+b)} + C$

9. $\int \cos au \cos bu \, du = \dfrac{\operatorname{sen}(a-b)u}{2(a-b)} + \dfrac{\operatorname{sen}(a+b)u}{2(a+b)} + C$

10. $\int \operatorname{sen}^2 u \, du = \dfrac{1}{2} u - \dfrac{1}{4} \operatorname{sen} 2u + C$

11. $\int \cos^2 u \, du = \dfrac{1}{2} u + \dfrac{1}{4} \operatorname{sen} 2u + C$

12. $\int \ln u \, du = u \ln u - u + C$