Formulario de Integrales

1

1. $\int dx = x + C$
2. $\int dx = x + C$
3. $\int dx = x + C$
4. $\int dx = x + C$
5. $\int dx = x + C$
6. $\int dx = x + C$
7. $\int dx = x + C$
8. $\int dx = x + C$
9. $\int dx = x + C$
10. $\int dx = x + C$

2 n = Constante

1. $\int x^n dx = \frac{x^{n+1}}{n+1} + C$
2. $\int x^n dx = \frac{x^{n+1}}{n+1} + C$
3. $\int x^n dx = \frac{x^{n+1}}{n+1} + C$
4. $\int x^n dx = \frac{x^{n+1}}{n+1} + C$
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6. $\int x^n dx = \frac{x^{n+1}}{n+1} + C$
7. $\int x^n dx = \frac{x^{n+1}}{n+1} + C$
8. $\int x^n dx = \frac{x^{n+1}}{n+1} + C$
9. $\int x^n dx = \frac{x^{n+1}}{n+1} + C$
10. $\int x^n dx = \frac{x^{n+1}}{n+1} + C$

3 a = constante

1. $\int a \cdot f(x)\, dx = a \int f(x)\, dx$
2. $\int a \cdot f(x)\, dx = a \int f(x)\, dx$
3. $\int a \cdot f(x)\, dx = a \int f(x)\, dx$
4. $\int a \cdot f(x)\, dx = a \int f(x)\, dx$
5. $\int a \cdot f(x)\, dx = a \int f(x)\, dx$
6. $\int a \cdot f(x)\, dx = a \int f(x)\, dx$
7. $\int a \cdot f(x)\, dx = a \int f(x)\, dx$
8. $\int a \cdot f(x)\, dx = a \int f(x)\, dx$
9. $\int a \cdot f(x)\, dx = a \int f(x)\, dx$
10. $\int a \cdot f(x)\, dx = a \int f(x)\, dx$

4 Especial

1. $\int \frac{1}{x}\,dx = \ln|x| + C$
2. $\int \frac{1}{x}\,dx = \ln|x| + C$
3. $\int \frac{1}{x}\,dx = \ln|x| + C$
4. $\int \frac{1}{x}\,dx = \ln|x| + C$
5. $\int \frac{1}{x}\,dx = \ln|x| + C$
6. $\int \frac{1}{x}\,dx = \ln|x| + C$
7. $\int \frac{1}{x}\,dx = \ln|x| + C$
8. $\int \frac{1}{x}\,dx = \ln|x| + C$
9. $\int \frac{1}{x}\,dx = \ln|x| + C$
10. $\int \frac{1}{x}\,dx = \ln|x| + C$

5

1. $\int e^x\,dx = e^x + C$
2. $\int e^x\,dx = e^x + C$
3. $\int e^x\,dx = e^x + C$
4. $\int e^x\,dx = e^x + C$
5. $\int e^x\,dx = e^x + C$
6. $\int e^x\,dx = e^x + C$
7. $\int e^x\,dx = e^x + C$
8. $\int e^x\,dx = e^x + C$
9. $\int e^x\,dx = e^x + C$
10. $\int e^x\,dx = e^x + C$

6

1. $\int a^x\,dx = \frac{a^x}{\ln a} + C$
2. $\int a^x\,dx = \frac{a^x}{\ln a} + C$
3. $\int a^x\,dx = \frac{a^x}{\ln a} + C$
4. $\int a^x\,dx = \frac{a^x}{\ln a} + C$
5. $\int a^x\,dx = \frac{a^x}{\ln a} + C$
6. $\int a^x\,dx = \frac{a^x}{\ln a} + C$
7. $\int a^x\,dx = \frac{a^x}{\ln a} + C$
8. $\int a^x\,dx = \frac{a^x}{\ln a} + C$
9. $\int a^x\,dx = \frac{a^x}{\ln a} + C$
10. $\int a^x\,dx = \frac{a^x}{\ln a} + C$

7

1. $\int f(x) \pm g(x)\,dx = \int f(x)\,dx \pm \int g(x)\,dx$
2. $\int f(x) \pm g(x)\,dx = \int f(x)\,dx \pm \int g(x)\,dx$
3. $\int f(x) \pm g(x)\,dx = \int f(x)\,dx \pm \int g(x)\,dx$
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8. $\int f(x) \pm g(x)\,dx = \int f(x)\,dx \pm \int g(x)\,dx$
9. $\int f(x) \pm g(x)\,dx = \int f(x)\,dx \pm \int g(x)\,dx$
10. $\int f(x) \pm g(x)\,dx = \int f(x)\,dx \pm \int g(x)\,dx$

8

1. $\int \operatorname{sen} x\,dx = -\cos x + C$
2. $\int \operatorname{sen} x\,dx = -\cos x + C$
3. $\int \operatorname{sen} x\,dx = -\cos x + C$
4. $\int \operatorname{sen} x\,dx = -\cos x + C$
5. $\int \operatorname{sen} x\,dx = -\cos x + C$
6. $\int \operatorname{sen} x\,dx = -\cos x + C$
7. $\int \operatorname{sen} x\,dx = -\cos x + C$
8. $\int \operatorname{sen} x\,dx = -\cos x + C$
9. $\int \operatorname{sen} x\,dx = -\cos x + C$
10. $\int \operatorname{sen} x\,dx = -\cos x + C$

9

1. $\int \cos x\,dx = \operatorname{sen} x + C$
2. $\int \cos x\,dx = \operatorname{sen} x + C$
3. $\int \cos x\,dx = \operatorname{sen} x + C$
4. $\int \cos x\,dx = \operatorname{sen} x + C$
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10. $\int \cos x\,dx = \operatorname{sen} x + C$

Nombre: Jhamil Calixto Memani Quea Paralelo: "C"

$$\int \cos \sqrt{x}\, dx$$

$$t = \sqrt{x}$$

$$t^2 = x$$

$$2t\, dt = dx$$

$$\int \cos(t)(2t\, dt)$$

$$2\int t \cos(t)\, dt$$

Derivamos por partes

$$\int u\, dv = uv - \int v\, du$$

$u = t$ $\quad dv = \cos(t)\, dt$

$du = dt$ $\quad v = \operatorname{sen}(t)$

$$= 2\left(t \operatorname{sen}(t) - \int \operatorname{sen}(t)\, dt\right)$$

$$= 2\left(t \operatorname{sen}(t) + \cos(t)\right) + C$$

$$= 2t \operatorname{sen}(t) + \cos(t) + C$$

$$= 2\sqrt{x} \operatorname{sen}(\sqrt{x}) + 2\cos(\sqrt{x}) + C$$

Nombre: Jhamil Calixto Memani Quea Paralelo: "C"

$$\int \ln(x^2+1)\,dx$$

Integración por partes $\int f\,dg = fg - \int g\,df$

$f = \ln(x^2+1)$ $dg = dx$

$\frac{df}{dx} = \frac{2x}{x^2+1}$ $g = x$

$df = \frac{2x}{x^2+1}\,dx$

$$= \ln(x^2+1)\,x - \boxed{\int x\,\frac{2x}{x^2+1}\,dx}$$

$$\int \frac{2x^2}{x^2+1}\,dx = 2\int \frac{x^2}{x^2+1}\,dx$$

$x^2+1 \;|\; x^2+0$

$-x^2-1 \;\;\; 1$

0

$$2\int \left(1 - \frac{1}{x^2+1}\right) dx$$

$$2\int 1\,dx - 2\int \frac{1}{x^2+1}\,dx = \boxed{2x - 2\tan^{-1}x + C}$$

$$\int \ln(x^2+1)\,dx = \ln(x^2+1)\,x - (2x - 2\tan^{-1}x + C)$$

$$\boxed{\int \ln(x^2+1)\,dx = \ln(x^2+1)\,x - 2x + 2\tan^{-1}x + C}$$