CENTRO DE ESTUDIOS MIRASIERRA www.selectividad.net/cem

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INTEGRALES

1.* $\int \frac{k\,x^n}{p}\,dx = \frac{k}{p}\int x^n\,dx = \frac{k\,x^{(n+1)}}{p\,(n+1)} + C \;\Rightarrow\; n \neq -1$

2.* $\int f(x) + g(x) - h(x)\,dx = \int f(x)\,dx + \int g(x)\,dx - \int h(x)\,dx$

3.* $\int \frac{x^n}{\sqrt[p]{x^k}}\,dx = \int x^n x^{-k/p}\,dx = \int x^{n-k/p}\,dx = \int x^L\,dx = \frac{x^{L+1}}{L+1} + C$

4.* $\int f'(x)\,[f(x)]^n\,dx = \frac{[\,f(x)\,]^{n+1}}{n+1} + C$ $\quad\left\{ \frac{f'(x)}{[\,f(x)\,]^n} = f'(x)[f(x)]^{-n} \quad ; \quad \frac{f'(x)}{\sqrt[n]{f(x)^p}} = f'(x)[\,f(x)\,]^{-p/n} \right.$

5.* $\int f'(x)\,k^{f(x)}\,dx = K^{f(x)} + C \Rightarrow Le = 1$

Si **Sobran "x" en f '(x)**, pasamos a resolverla **por partes**

6.* $\int \frac{f'(x)}{f(x)}\,dx = L|f(x)| + C$

7.* $\int \frac{f(x) \pm g(x)}{p(x)}\,dx = \int \frac{f(x)}{p(x)}\,dx \pm \int \frac{g(x)}{p(x)}\,dx$

8.* $\int \frac{f(x)}{g(x)}\,dx \Rightarrow$ si el exponente de $f(x) \geq g(x) \Rightarrow$

f(x)	**g(x)**
Rt	**Co**

$\int \frac{f(x)}{g(x)}\,dx = \int Co + \frac{Rt}{g(x)}\,dx$

9.* $\int \frac{f(x)}{g(x)}\,dx \Rightarrow$ Resolvemos $g(x) = 0 \Rightarrow x_1 = a\,;\; x_2 = -b \Rightarrow \frac{f(x)}{g(x)} = \frac{A}{x-a} + \frac{B}{x+b}$

Si **no hay soluciones** en los reales **g(x) = 0,** pasamos a **ver si es arc.tang**

$\int \frac{f(x)}{g(x)}\,dx = \int \frac{A}{x-a}\,dx + \int \frac{B}{x+b}\,dx$ $\qquad Si\; g(x) = (x-a)^2(x+b) \Rightarrow \frac{f(x)}{g(x)} = \frac{A}{(x-a)^2} + \frac{B}{x-a} + \frac{C}{x+b}$

Trigonométricas :

$\int f'(x)\cos f(x)\,dx = \operatorname{sen} f(x) + C$ $\qquad \int f'(x)\operatorname{sen} f(x)\,dx = -\cos f(x) + C$

$\int \frac{f'(x)}{\cos^2 f(x)}\,dx = \operatorname{tang} f(x) + C$ $\qquad \int \frac{f'(x)}{\operatorname{sen}^2 f(x)}\,dx = -\cos f(x) + C$

$\int \frac{f'(x)}{\sqrt{1-[f(x)]^2}}\,dx = \operatorname{arc.sen} f(x) + C$ $\qquad \int \frac{-f'(x)}{\sqrt{1-[f(x)]^2}}\,dx = \operatorname{arc.cos} f(x) + C$

$\int \frac{f'(x)}{1+[f(x)]^2}\,dx = \operatorname{arc.tag} f(x) + C$ $\qquad \int \frac{-f'(x)}{1+[f(x)]^2}\,dx = \operatorname{arc.cotag} f(x) + C$

Si **sobran "x" en f´(x)** , pasamos a resolverla **por partes**

CEM