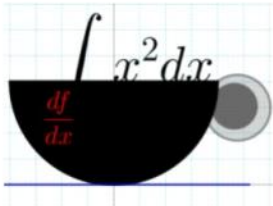


Día 3



Petit-dejeuner #3

Primitivas de una función de tipo logarítmico.

$$(i) \int \frac{1}{2x} dx \quad (ii) \int \frac{1}{x+a} dx \quad (iii) \int \frac{1}{kx+a} dx$$

$$(iv) \int \frac{x}{x^2-5} dx \quad (v) \int \frac{x^2}{x^3+4} dx \quad (vi) \int \frac{x^3}{3x^4+5} dx$$

$$\ln x \xrightarrow{d} \frac{1}{x} \Leftrightarrow \int \frac{1}{x} dx = \ln x + k$$

$$\ln(5x+1) \xrightarrow{d} \frac{5}{5x+1} \Leftrightarrow \int \frac{1}{5x+1} dx = \ln(5x+1) + k$$

$$\ln(x^2+3x) \xrightarrow{d} \frac{2x}{x^2+3} \Rightarrow \int \frac{2x}{x^2+3} dx = \ln(x^2+3) + k$$

$$(i) \int \frac{dx}{2x} = \int \frac{1}{2} \frac{1}{x} dx = \frac{1}{2} \int \frac{1}{x} dx = \frac{1}{2} \ln x = \ln \sqrt{x} + k$$

$$(ii) \int \frac{1}{x+a} dx = \ln(x+a) + k \quad [\text{requiere obtener}]$$

$$(iii) \int \frac{1}{kx+a} dx = \int \frac{1}{k} \frac{k}{kx+a} dx = \frac{1}{k} \int \frac{k}{kx+a} dx = \frac{1}{k} \ln(kx+a) + C$$

$$(iv) \int \frac{x}{x^2-5} dx = \frac{1}{2} \int \frac{2x}{x^2-5} dx = \frac{1}{2} \ln|x^2-5| + k$$

$$(iv) \int \frac{x}{x^2-5} dx = \int \frac{1}{2} \frac{2x}{x^2-5} dx = \frac{1}{2} \int \frac{2x}{x^2-5} dx = \frac{1}{2} \ln(x^2-5) + k$$

$$(v) \int \frac{x^2}{x^3+4} dx = \int \frac{1}{3} \frac{3x^2}{x^3+4} dx = \frac{1}{3} \int \frac{3x^2}{x^3+4} dx = \frac{1}{3} \ln(x^3+4) + k$$

$$(vi) \int \frac{x^3}{3x^4+5} dx = \int \frac{1}{12} \frac{12x^3}{3x^4+5} dx = \frac{1}{12} \int \frac{12x^3}{3x^4+5} dx = \frac{1}{12} \ln(3x^4+5)$$