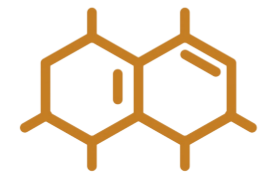


a)

$$\int 1 dx$$

Símbolo de la integral

diferencial de "x" → porque vamos a derivar respecto a la letra "x"

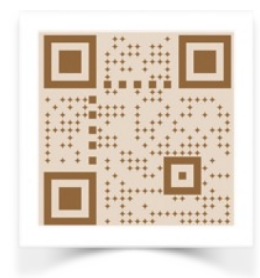


ACADEMIA TEMAS

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

$$b) \int x^2 dx = \frac{x^{2+1}}{2+1} + c = \frac{x^3}{3} + c$$

$$c) \int x^9 dx = \frac{x^{9+1}}{9+1} = \frac{x^{10}}{10} + c$$



<https://youtube.com/@Academiatemas?si=fOJYAN4EiDXg6yaI>

$$\textcircled{d} \int \frac{dx}{x^5} = \int \frac{1}{x^5} \cdot dx = \int \frac{x^{-5}}{1} \cdot dx = \frac{x^{-5+1}}{-5+1} = \frac{x^{-4}}{-4}$$

$$= \frac{1}{-4 \cdot x^4} + C$$

$$\textcircled{e} \int \frac{dx}{\sqrt[6]{x}} = \int \frac{1}{\sqrt[6]{x}} dx = \int \frac{1}{x^{\frac{1}{6}}} dx = \int x^{-\frac{1}{6}} dx$$



Exponente
Indice

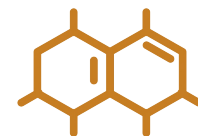
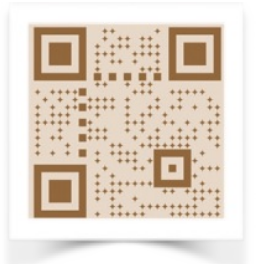


$$= \frac{x^{-\frac{1}{6}+1}}{-\frac{1}{6}+1} = \frac{x^{\frac{5}{6}}}{\frac{5}{6}} = \frac{6 \cdot x^{\frac{5}{6}}}{5} = \frac{6 \cdot \sqrt[6]{x^5}}{5} + C$$

$$x^{5/6} = \frac{x^{5/6}}{1} = \frac{6 \cdot x^{5/6}}{6 \cdot 1} = \frac{6 \sqrt[6]{x^5}}{6}$$

$$\begin{aligned} \textcircled{8} \int \sqrt[7]{x^2} dx &= \int x^{\frac{2}{7}} dx = \frac{x^{\frac{2}{7}+1}}{\frac{2}{7}+1} = \frac{x^{\frac{9}{7}}}{\frac{9}{7}} \\ &= \frac{7 x^{\frac{9}{7}}}{9} = \frac{7 \sqrt[7]{x^9}}{9} = \frac{7 x \sqrt[7]{x^2}}{9} + C \end{aligned}$$

$$\begin{array}{r} 9 \overline{) 7} \\ \underline{-7} \phantom{0} \\ 0 \phantom{0} \\ \underline{-0} \\ 0 \end{array}$$

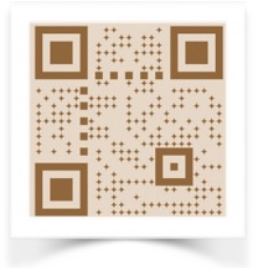


2

$$a) \int (\underline{x^2} + \underline{x}) dx = \int x^2 dx + \int x dx$$

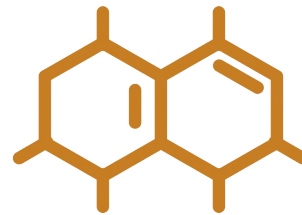
$$= \frac{x^3}{3} + \frac{x^2}{2} + C$$

Se puede separar  
en tantas integrales  
como monomios  
tenemos



$$b) \int 5 \cdot \cos(x) dx = 5 \cdot \int \cos(x) dx = 5 \cdot \sin(x) + C$$

Las constantes  
pueden salir  
fuera

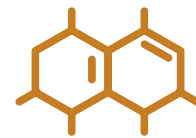


**ACADEMIA  
TEMAS**



$$\int 5 dx$$

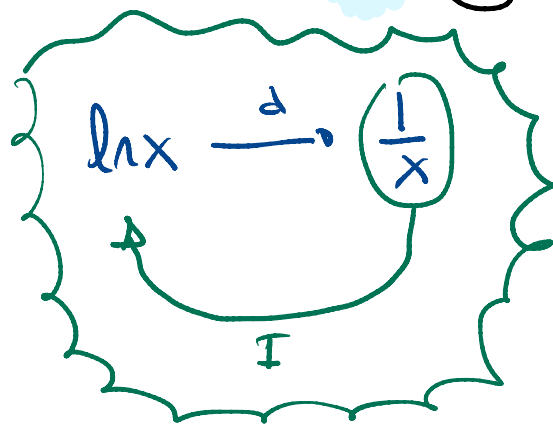
$$\int 5 dx = 5x$$



ACADEMIA  
TEMAS

$$\int 5 dx = 5 \cdot \int 1 dx = 5 \cdot x = 5x$$

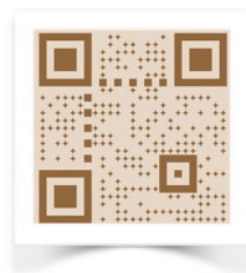
$$c) \int \frac{dx}{8x} = \int \frac{1}{8x} dx = \frac{1}{8} \cdot \int \frac{1}{x} dx = \frac{1}{8} \int x^{-1} dx$$



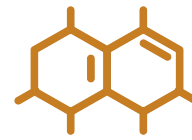
$$\frac{x^{-1+1}}{-1+1} = \frac{x^0}{0} = \cancel{A}$$

Este es el  
Único que NO  
se convierte a  
exponente ⊖

$$= \frac{1}{8} \int \frac{1}{x} dx = \frac{1}{8} \cdot \ln|x| + C$$



se pone valor absoluto | |  
Porque un logaritmo no  
puede ser ni cero ni un N° negativo.

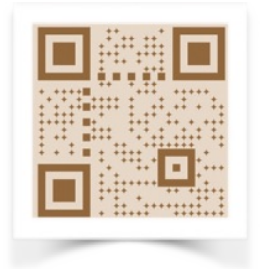


[2]...

$$d) \int \frac{7}{x^3} dx = 7 \int \frac{1}{x^3} dx = 7 \int x^{-3} dx$$
$$= 7 \cdot \frac{x^{-3+1}}{-3+1} = 7 \cdot \frac{x^{-2}}{-2} = \frac{7}{-2 x^2} + c$$

$$e) \int \frac{\sqrt[8]{x^3}}{11} dx = \frac{1}{11} \cdot \int \sqrt[8]{x^3} dx = \frac{1}{11} \cdot \int x^{3/8} dx = \frac{1}{11} \cdot \frac{x^{3/8+1}}{\frac{3}{8}+1}$$
$$= \frac{1}{11} \cdot \frac{x^{11/8}}{\frac{11}{8}} = \frac{8 \cdot x^{11/8}}{121} = \frac{8 \cdot \sqrt[8]{x^{11}}}{121} = \frac{8 \cdot x \sqrt[8]{x^3}}{121} + c$$

$$g) \int \left( 6e^x + \frac{7}{x} \right) dx = \int 6e^x dx + \int \frac{7}{x} dx = 6 \cdot \int e^x dx + 7 \cdot \int \frac{1}{x} dx$$
$$= 6 \cdot e^x + 7 \ln|x| + c$$



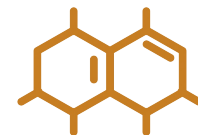
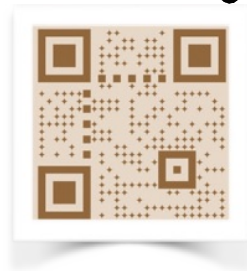
$$g) \int \left( \frac{3}{1+x^2} + 1 \right) dx = \int \frac{3}{1+x^2} dx + \int 1 dx = 3 \int \frac{1}{1+x^2} dx + x$$

$$= 3 \cdot \operatorname{arctg}(x) + x + C$$

$$h) \int \left( 3x^5 - \frac{7}{\sqrt{1-x^2}} + \frac{9}{\cos^2 x} \right) dx = \int 3x^5 dx - \int \frac{7}{\sqrt{1-x^2}} dx + \int \frac{9}{\cos^2 x} dx$$

$$= \frac{3x^6}{6} - 7 \int \frac{1}{\sqrt{1-x^2}} dx + 9 \int \frac{1}{\cos^2 x} dx$$

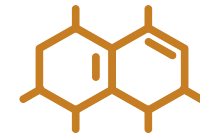
$$= \frac{3x^6}{6} - 7 \operatorname{arcsin}(x) + 9 \operatorname{tg}(x) + C$$



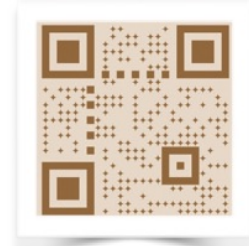
$$i) \int \left( 8 \cdot e^x - \frac{5}{3x} + \frac{2}{x^4} \right) dx$$

$$8e^x - \frac{5}{3} \ln|x| - \frac{2}{3x^3} + c$$

$$\int \frac{2}{x^4} dx = 2 \int x^{-4} dx = 2 \frac{x^{-3}}{-3} = -\frac{2}{3x^3}$$



ACADEMIA  
TEMAS



j)

$$\int \left( 2 \operatorname{sen}(x) + \frac{11}{\sqrt{1-x^2}} - \frac{5}{x^2} \right) dx$$

$$\int \frac{5}{x^2} dx = 5 \int x^{-2} dx = 5 \cdot \frac{x^{-2+1}}{-2+1} = 5 \frac{x^{-1}}{-1}$$

$$= -\frac{5}{x}$$

$$= -2 \cdot \cos(x) + 11 \operatorname{arcsen}(x) + \frac{5}{x} + c$$

