

EJERCICIO M2BE2322:

Resolver la siguiente integral:

$$\int \frac{\sqrt[3]{x+2x^2-3}}{\sqrt[3]{x^2}} dx =$$

*¡SUSTITUCIÓN!*

$$x=t^3 \Rightarrow dx = 3t^2 dt$$

$$= \int \frac{\sqrt[3]{t^3+2t^6-3}}{\sqrt[3]{t^6}} 3t^2 dt =$$

$$= \int \frac{t+2t^6-3}{t^2} 3t^2 dt =$$

$$= 3 \int (2t^6+t-3) dt =$$

$$= 3 \left( \frac{2t^7}{7} + \frac{t^2}{2} - 3t \right) = \left[ \begin{array}{l} x=t^3 \\ t=\sqrt[3]{x} \end{array} \right]$$

$$= \frac{6}{7} t^7 + \frac{3}{2} t^2 - 9t =$$

$$= \frac{6}{7} (\sqrt[3]{x})^7 + \frac{3}{2} (\sqrt[3]{x})^2 - 9\sqrt[3]{x} =$$

$$= \boxed{\frac{6}{7} x^2 \sqrt[3]{x} + \frac{3}{2} \sqrt[3]{x^2} - 9\sqrt[3]{x} + C}$$