

EJERCICIO 2. Calcular las siguientes integrales inmediatas

$$1. \int \frac{1}{3+3x^2} dx = \int \frac{1}{3(1+x^2)} dx = \frac{1}{3} \int \frac{1}{(1+x^2)} dx = \frac{1}{3} \operatorname{arctg} x + K$$

$$2. \int \frac{x^3-4x^2+2x-1}{x} dx = \int \left( \frac{x^3}{x} - \frac{4x^2}{x} + \frac{2x}{x} - \frac{1}{x} \right) dx = \int x^2 dx - 4 \int x dx + 2 \int dx - \int \frac{1}{x} dx =$$

$$\frac{x^3}{3} - 4 \frac{x^2}{2} + 2x - \ln x + K = \frac{x^3}{3} - 2x^2 + 2x - \ln x + K$$

$$3. \int 12^x dx = 12^x / \ln 12 + K$$

$$4. \int \left( \frac{1}{x} + \frac{5}{x^2} + 3 \right) dx = \int \frac{1}{x} dx + \int \frac{5}{x^2} dx + \int 3 dx = \ln x + 5 \frac{x^{-2+1}}{-2+1} + 3x + K = \ln x - 5/x + 3x + K$$

$$5. \int \left( \frac{1}{\cos^2 x} + \frac{1}{\operatorname{sen}^2 x} \right) dx = \int \left( \frac{1}{\cos^2 x} \right) dx + \int \left( \frac{1}{\operatorname{sen}^2 x} \right) dx = \operatorname{tag} x - \operatorname{cotag} x + K$$

$$6. \int \frac{1}{8x^2+8} dx = \int \frac{1}{8(x^2+1)} dx = \frac{1}{8} \int \frac{1}{x^2+1} dx = \int \frac{1}{1+x^2} dx = \frac{1}{8} \operatorname{arctg} x + K$$

$$7. \int \sqrt[6]{x} dx = \int x^{1/6} dx = \frac{x^{1/6+1}}{1/6+1} + K = \frac{x^{7/6}}{7/6} + K = \frac{6}{7} x^{7/6} + K = \frac{6}{7} \sqrt[6]{x^7} + K = \frac{6}{7} x \sqrt[6]{x} + K$$

$$8. \int \sqrt[4]{x^3} dx = \int x^{3/4} dx = \frac{x^{3/4+1}}{3/4+1} + K = \frac{x^{7/4}}{7/4} + K = \frac{4}{7} \sqrt[4]{x^7} + K = \frac{4}{7} x \sqrt[4]{x^3} + K$$

$$9. \int \frac{2}{\sqrt{5x}} dx = \frac{2}{\sqrt{5}} \int \frac{dx}{\sqrt{x}} = \frac{2}{\sqrt{5}} \int x^{-1/2} dx = \frac{2}{\sqrt{5}} \frac{x^{-1/2+1}}{-1/2+1} + K = \frac{2}{\sqrt{5}} \frac{x^{1/2}}{1/2} + K = \frac{4}{\sqrt{5}} \sqrt{x} + K = \frac{4\sqrt{5}}{5} \sqrt{x} + K$$