

EJERCICIO M2BE2297:

$$\int \frac{7 dx}{2+3x^2} =$$

$$\int \frac{f'(x)}{1+[f(x)]^2} dx = \operatorname{arctg} f(x) + C$$

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

$$= \frac{7}{2} \frac{\sqrt{2}}{\sqrt{3}} \int \frac{\frac{\sqrt{3}}{\sqrt{2}} dx}{1+\left(\frac{\sqrt{3}x}{\sqrt{2}}\right)^2} = \frac{7\sqrt{2}}{2\sqrt{3}} \operatorname{arctg} \frac{\sqrt{3}x}{\sqrt{2}} =$$

$$= \frac{7\sqrt{2}\sqrt{3}}{2\sqrt{3}\sqrt{3}} \operatorname{arctg} \frac{\sqrt{3}x\sqrt{2}}{\sqrt{2}\sqrt{2}} =$$

$$= \frac{7\sqrt{6}}{6} \operatorname{arctg} \frac{\sqrt{6}x}{2} + C$$