

Integración por cambio de variable

Resolver las siguientes integrales:

$$a) \int \frac{3x}{\sqrt{1+7x^2}} dx = \frac{3\sqrt{1+7x^2}}{7} + K \quad (\text{cambio } 1+7x^2 = t^2)$$

$$b) \int \frac{5}{x \ln x} dx = 5 \ln |\ln |x|| + K \quad (\text{cambio } \ln x = t)$$

$$c) \int \frac{5}{\sqrt{9-4x^2}} dx = \frac{5}{2} \arcsen\left(\frac{2x}{3}\right) + K \quad (\text{cambio } 2x = 3 \text{sent})$$

$$d) \int \sqrt{4-x^2} dx = 2 \arcsen\left(\frac{x}{2}\right) + \frac{x\sqrt{4-x^2}}{2} + K \quad (\text{cambio } x = 2 \text{sent})$$

$$e) \int \text{sen} x \cos x dx = \frac{\text{sen}^2 x}{2} + K \quad (\text{cambio } \text{sen} x = t)$$

$$f) \int \frac{\text{arctg} x}{1+x^2} dx = \frac{\text{arctg}^2 x}{2} + K \quad (\text{cambio } \text{arctg} x = t)$$

$$g) \int \frac{x+1}{\sqrt{x-1}} dx = \frac{2}{3} (x-1)\sqrt{x-1} + 4\sqrt{x-1} + K \quad (\text{cambio } \sqrt{x-1} = t)$$

$$h) \int \frac{\ln(\ln x)}{x} dx = \ln x (\ln |\ln |x||) - \ln |x| + K \quad (\text{cambio } \ln x = t)$$

$$i) \int \text{sen}^3 x \cos x dx = \frac{\text{sen}^4 x}{4} + K \quad (\text{cambio } \text{sen} x = t)$$

$$j) \int \frac{1}{x^2 \sqrt{4-x^2}} dx = -\frac{1}{4} \text{tg} \left(\arccos\left(\frac{x}{2}\right) \right) + K \quad (\text{cambio } x = 2 \text{cost})$$

$$k) \int \frac{\text{tg}^3 x}{\cos^2 x} dx = \frac{\text{tg}^4 x}{4} + K \quad (\text{cambio } \text{tg} x = t)$$

$$l) \int \sqrt{1+\text{sen} 2x} dx = -\sqrt{1-\text{sen} 2x} + K \quad (\text{cambio } 1+\text{sen} 2x = t^2)$$

$$m) \int \frac{\cos^5 x}{\text{sen}^3 x} dx = -\frac{1}{2 \text{sen}^2 x} - 2 \ln |\text{sen} x| + \frac{\text{sen}^2 x}{2} + K \quad (\text{cambio } \text{sen} x = t)$$