

Ejercicios propuestos

$$1) I = \int_0^2 \frac{dx}{\sqrt{|1-x^2|}} = \frac{\pi}{2} + \text{Log}(2 + \sqrt{3})$$

$$2) I = \int_0^1 x^2 \text{Log} x \, dx = -\frac{1}{9}$$

$$3) I = \int_0^1 \frac{dx}{\sqrt{1-x^2}} = \frac{\pi}{2}$$

$$4) I = \int_0^1 \frac{x}{\sqrt{1-x^2}} \, dx = 1$$

$$5) I = \int_0^{+\infty} \frac{dx}{x^2 + a^2} = \frac{\pi}{2a} \quad (a > 0)$$

$$6) I = \int_0^1 \text{Log} x \, dx = -1$$

$$7) I = \int_1^{33} \frac{dx}{\sqrt[5]{x-1}} = 20$$

$$8) I = \int_{-\infty}^{+\infty} \frac{e^x}{1+e^{2x}} \, dx = \frac{\pi}{2}$$

Integrales impropias

$$9) I = \int_1^{\infty} (1-x)e^{-x} dx = -\frac{1}{e}$$

$$10) I = \int_0^2 \frac{dx}{2-x} = \infty$$

$$11) I = \int_0^4 \frac{dx}{(x-1)^2} = \infty$$

$$12) I = \int_0^{\pi/2} \frac{\cos x}{\sqrt{1-\sin x}} dx = 2$$

$$13) I = \int_0^1 \frac{dx}{1-x} = \infty$$

$$14) I = \int_0^{\pi/2} \sec x dx = \infty$$

$$15) I = \int_{-\infty}^0 e^{2x} dx = \frac{1}{2}$$

$$16) I = \int_0^3 \frac{dx}{\sqrt{9-x^2}} = \frac{\pi}{2}$$

$$17) I = \int_2^{\infty} \frac{dx}{x(\text{Log}x)^2} = \frac{1}{\text{Log}2}$$

$$18) I = \int_{-1}^1 \frac{dx}{x^4} = \infty$$

Introducción al cálculo integral

$$19) I = \int_0^4 \frac{dx}{4-x} = \infty$$

$$20) I = \int_a^{+\infty} \frac{dx}{x \operatorname{Log} x} = \infty \quad (a > 1)$$

$$21) I = \int_{-\infty}^{+\infty} \frac{dx}{x^2 + 4x + 9} = \frac{\pi}{\sqrt{5}}$$