1 Ejemplo de una ecuación de variables separables

$$\sqrt{1-x^2}dy + \sqrt{1-y^2}dx = 0 \tag{1}$$

$$\int \frac{dx}{\sqrt{1-x^2}} = -\int \frac{dy}{\sqrt{1-y^2}} \tag{2}$$

$$\text{arcsen}(x) = -\text{arcsen}(y) + C \tag{3}$$

$$\int \left(\frac{2vdv}{1+3v^2}\right) \tag{4}$$

$$\int \frac{dW}{W} = \ln|W| \tag{5}$$

$$W = 1+3v^2,\ \ dW = 2(3)vdv = 6vdv = (\frac{1}{3})3(2vdv) \tag{6}$$

2 Ejemplo de una ecuación diferencial homogénea

$$(x^2+y^2)dy + 2xydx = 0 \tag{7}$$

$$\left(1+\left(\frac{y}{x}\right)^2\right)dy + 2\left(\frac{y}{x}\right)dx = 0 \tag{8}$$

$$\left(1+\left(\frac{y}{x}\right)^2\right)\frac{dy}{dx} = -2\left(\frac{y}{x}\right) \tag{9}$$

$$\frac{dy}{dx} = \frac{-2\left(\frac{y}{x}\right)}{1+\left(\frac{y}{x}\right)^2} \tag{10}$$

$$ax^2 + bx + c = 0 \tag{11}$$

$$\text{This is just a simple teest!} Ax + C = 0 \tag{12}$$