かんたんな微分方程式

hsjoihs

1.

$$\frac{dy}{dx} = x + y$$

$$e^{-x}\left(\frac{dy}{dx} - y\right) = xe^{-x}$$

$$\frac{d}{dx}(ye^{-x}) = xe^{-x}$$

$$ye^{-x} = \int xe^{-x}dx = -e^{-x}(x+1) + C$$

$$y = -(x+1) + Ce^{x}$$

2.

$$\frac{d^2}{dt^2}\sin(\omega t + \theta_0) = -\omega^2 \sin(\omega t + \theta_0)$$