

> restart

>

$$(m-1)(m-2)(m+3)(m-4)(m+5)=0$$

> EcuaCaract := expand((m-1)*(m-2)*(m+3)*(m-4)*(m+5))=0

$$EcuaCaract := m^5 + m^4 - 27 m^3 - m^2 + 146 m - 120 = 0 \quad (1)$$

> restart

> Ecuacion := y''=0

$$Ecuacion := \frac{d^2}{dx^2} y(x) = 0 \quad (2)$$

> SolucionGeneral := dsolve(Ecuacion)

$$SolucionGeneral := y(x) = _C1 x + _C2 \quad (3)$$

> restart

> Ecuacion := y'' + 2 y' + y = 0

$$Ecuacion := \frac{d^2}{dx^2} y(x) + 2 \left(\frac{d}{dx} y(x) \right) + y(x) = 0 \quad (4)$$

> SolucionGeneral := dsolve(Ecuacion)

$$SolucionGeneral := y(x) = _C1 e^{-x} + _C2 e^{-x} x \quad (5)$$

> restart

> Ecuacion := y''' - 3 y'' + 3 y' - y = 0

$$Ecuacion := \frac{d^3}{dx^3} y(x) - 3 \left(\frac{d^2}{dx^2} y(x) \right) + 3 \left(\frac{d}{dx} y(x) \right) - y(x) = 0 \quad (6)$$

> SolucionGeneral := dsolve(Ecuacion)

$$SolucionGeneral := y(x) = _C1 e^x + _C2 e^x x + _C3 e^x x^2 \quad (7)$$

> restart

>