> *restart*

> $Ecua := y'' + y' + y = 0$

$$Ecua := \frac{d^2}{dx^2}\, y(x) + \frac{d}{dx}\, y(x) + y(x) = 0 \tag{1}$$

> $SolGral := dsolve(Ecua)$

$$SolGral := y(x) = \_C1\, e^{-\frac{1}{2}\,x} \sin\!\left(\frac{1}{2}\,\sqrt{3}\,x\right) + \_C2\, e^{-\frac{1}{2}\,x} \cos\!\left(\frac{1}{2}\,\sqrt{3}\,x\right) \tag{2}$$

> $EcuaCarc := m^2 + m + 1 = 0$

$$EcuaCarc := m^2 + m + 1 = 0 \tag{3}$$

> $Raiz := solve(EcuaCarc) : Raiz[1]; Raiz[2]; a := \mathrm{Re}(Raiz[1]); b := \mathrm{Im}(Raiz[1])$

$$-\frac{1}{2} + \frac{1}{2}\,I\sqrt{3}$$

$$-\frac{1}{2} - \frac{1}{2}\,I\sqrt{3}$$

$$a := -\frac{1}{2}$$

$$b := \frac{1}{2}\,\sqrt{3} \tag{4}$$

> $SolGralDos := y(x) = \_C10 \cdot \exp(a \cdot x) \cdot \cos(b \cdot x) + \_C20 \cdot \exp(a \cdot x) \cdot \sin(b \cdot x)$

$$SolGralDos := y(x) = \_C10\, e^{-\frac{1}{2}\,x} \cos\!\left(\frac{1}{2}\,\sqrt{3}\,x\right) + \_C20\, e^{-\frac{1}{2}\,x} \sin\!\left(\frac{1}{2}\,\sqrt{3}\,x\right) \tag{5}$$

> $SolGral$

$$y(x) = \_C1\, e^{-\frac{1}{2}\,x} \sin\!\left(\frac{1}{2}\,\sqrt{3}\,x\right) + \_C2\, e^{-\frac{1}{2}\,x} \cos\!\left(\frac{1}{2}\,\sqrt{3}\,x\right) \tag{6}$$

> *restart*

> $Ecua := y'' - 4 \cdot y' + 4 \cdot y = 0$

$$Ecua := \frac{d^2}{dx^2}\, y(x) - 4\left(\frac{d}{dx}\, y(x)\right) + 4\,y(x) = 0 \tag{7}$$

> $SolGral := dsolve(Ecua)$

$$SolGral := y(x) = \_C1\, e^{2x} + \_C2\, e^{2x}\, x \tag{8}$$

> $EcuaCarac := m^2 - 4 \cdot m + 4 = 0$

$$EcuaCarac := m^2 - 4\,m + 4 = 0 \tag{9}$$

> $Raiz := solve(EcuaCarac)$

$$Raiz := 2, 2 \tag{10}$$

> $SolGralDos := y(x) = \_C10 \cdot \exp(Raiz[1] \cdot x) + \_C20 \cdot x \cdot \exp(Raiz[1] \cdot x)$

$$SolGralDos := y(x) = \_C10\, e^{2x} + \_C20\, x\, e^{2x} \tag{11}$$

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