**>** *restart*

**>** $Ecua := 2 \cdot y(x) \cdot (diff(y(x), x) + 2) - x \cdot (diff(y(x), x)) \cdot \cdot 2 = 0$

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

**>** $Sol := dsolve(Ecua)$

$$Sol := y(x) = 0,\ y(x) = -4\,x,\ y(x) = \frac{1}{2}\, \frac{x\,(-x + 2\,\_C1)^2}{\_C1^2 \left( -\dfrac{-x + 2\,\_C1}{\_C1} + 2 \right)} \tag{2}$$

**>** $SolGral := simplify(Sol[3])$

$$SolGral := y(x) = \frac{1}{2}\, \frac{(-x + 2\,\_C1)^2}{\_C1} \tag{3}$$

**>** $Comprobacion[1] := simplify(eval(subs(y(x) = rhs(SolGral), Ecua)))$

$$Comprobacion_1 := 0 = 0 \tag{4}$$

**>** $SolGralUno := simplify\left( subs\left( \_C1 = \frac{C}{2},\ SolGral \right) \right)$

$$SolGralUno := y(x) = \frac{(-x + C)^2}{C} \tag{5}$$

**>** $DerSolGral := diff(SolGralUno, x)$

$$DerSolGral := \frac{d}{dx}\, y(x) = -\frac{2\,(-x + C)}{C} \tag{6}$$

**>** $Sol[1]$

$$y(x) = 0 \tag{7}$$

**>** $Sol[2]$

$$y(x) = -4\,x \tag{8}$$

**>** $Comprobacion[2] := solve(rhs(SolGralUno) = rhs(Sol[2]), C)$

$$Comprobacion_2 := -x,\ -x \tag{9}$$

**>** $Comprobacion[2] := solve(rhs(SolGralUno) = rhs(Sol[1]), C)$

$$Comprobacion_2 := x,\ x \tag{10}$$

**>** $SolPart[1] := subs(C = 2, SolGralUno)$

$$SolPart_1 := y(x) = \frac{1}{2}\,(-x + 2)^2 \tag{11}$$

**>** $Comprobacion[3] := solve(rhs(SolGralUno) = rhs(SolPart[1]), C)$

$$Comprobacion_3 := 2,\ \frac{1}{2}\,x^2 \tag{12}$$

**>**