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> restart
> EcuacionOrdinaria := diff(y(x), x$2) + 5·diff(y(x), x) + 6·y(x) = 2·x2 + 4·exp(3 x)
      EcuacionOrdinaria :=  $\frac{d^2}{dx^2} y(x) + 5 \frac{d}{dx} y(x) + 6 y(x) = 2 x^2 + 4 e^{3 x}$  (1)
> EcuaDos := y'' + 5·y' + 6·y = 2·x2 + 4·exp(3 x)
      EcuaDos :=  $\frac{d^2}{dx^2} y(x) + 5 \frac{d}{dx} y(x) + 6 y(x) = 2 x^2 + 4 e^{3 x}$  (2)
> SolucionUno := dsolve(EcuacionOrdinaria)
      SolucionUno :=  $y(x) = e^{-3 x} c_2 + e^{-2 x} c_1 + \frac{x^2}{3} - \frac{5 x}{9} + \frac{19}{54} + \frac{2 e^{3 x}}{15}$  (3)
> SolDos := dsolve(EcuaDos)
      SolDos :=  $y(x) = e^{-3 x} c_2 + e^{-2 x} c_1 + \frac{x^2}{3} - \frac{5 x}{9} + \frac{19}{54} + \frac{2 e^{3 x}}{15}$  (4)
> restart
> EcuaDerPar := diff(z(x, y), x$2) + diff(z(x, y), x, y) + 3·diff(z(x, y), y$2) = z(x, y)
      EcuaDerPar :=  $\frac{\partial^2}{\partial x^2} z(x, y) + \frac{\partial^2}{\partial x \partial y} z(x, y) + 3 \frac{\partial^2}{\partial y^2} z(x, y) = z(x, y)$  (5)
> SolGral := pdsolve(EcuaDerPar)
      SolGral :=  $z(x, y) = f_1(\xi_1) f_2(\xi_2)$  where  $\left[ \left\{ \frac{d^2}{d_{\xi 1}^2} f_1(\xi_1) = -c_1 f_1(\xi_1), \frac{d^2}{d_{\xi 2}^2} f_2(\xi_2) = \right. \right.$  (6)
       $\left. - \frac{11 - c_1 f_2(\xi_2)}{4} + f_2(\xi_2) \right\}, \text{ and } \left\{ \xi_1 = y - \frac{x}{2}, \xi_2 = x \right\} \right]$ 
> with(DEtools) :
> restart
> Ecua := y'' - 9·y = 8 - 36·x2
      Ecua :=  $\frac{d^2}{dx^2} y(x) - 9 y(x) = -36 x^2 + 8$  (7)
> SolGral := dsolve(Ecua)
      SolGral :=  $y(x) = e^{-3 x} c_2 + e^{3 x} c_1 + 4 x^2$  (8)
> restart
>

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