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[> restart :
[LA ECUACIÓN LINEAL HOMOGÉNEA
[> Ecuacion := diff(y(x), x$2) + 4·diff(y(x), x) + 13·y(x) = 0;
      Ecuacion :=  $\frac{d^2}{dx^2} y(x) + 4 \left( \frac{d}{dx} y(x) \right) + 13 y(x) = 0$  (1)
[> SolucionGeneral := dsolve(Ecuacion);
      SolucionGeneral :=  $y(x) = \_C1 e^{-2x} \sin(3x) + \_C2 e^{-2x} \cos(3x)$  (2)
[> Raiz1 := -2 + 3·I, Raiz2 := -2 - 3·I;
      Raiz1 := -2 + 3 I
      Raiz2 := -2 - 3 I (3)
[> EcuacionCaracteristica := expand((m - Raiz1) · (m - Raiz2)) = 0;
      EcuacionCaracteristica :=  $m^2 + 4m + 13 = 0$  (4)
[> restart
[> Raiz1 := -1; Raiz2 := -1; Raiz3 := -1 + I; Raiz4 := -1 - I;
      Raiz1 := -1
      Raiz2 := -1
      Raiz3 := -1 + I
      Raiz4 := -1 - I (5)
[> Ecuacioncaracteristica := expand((m - Raiz1) · (m - Raiz2) · (m - Raiz3) · (m - Raiz4))
      = 0;
      Ecuacioncaracteristica :=  $m^4 + 4m^3 + 2 + 7m^2 + 6m = 0$  (6)
[> EcuacionDiferencial := y'''' + 4·y''' + 7·y'' + 6·y' + 2·y = 0;
      EcuacionDiferencial :=  $\frac{d^4}{dx^4} y(x) + 4 \left( \frac{d^3}{dx^3} y(x) \right) + 7 \left( \frac{d^2}{dx^2} y(x) \right) + 6 \left( \frac{d}{dx} y(x) \right)$ 
      + 2 y(x) = 0 (7)
[> SolucionGeneral := dsolve(EcuacionDiferencial);
      SolucionGeneral :=  $y(x) = \_C1 e^{-x} + \_C2 e^{-x} x + \_C3 e^{-x} \sin(x) + \_C4 e^{-x} \cos(x)$  (8)
[>
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