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> restart
> EcuacionDiferencial := y'=0
      EcuacionDiferencial :=  $\frac{d}{dx} y(x) = 0$  (1)
> Solucion := y(x) = _C1
      Solucion :=  $y(x) = \_C1$  (2)
> Comprobacion := eval(subs(y(x) = rhs(Solucion), EcuacionDiferencial))
      Comprobacion :=  $0 = 0$  (3)
> restart
> Ecuacion := y'=y
      Ecuacion :=  $\frac{d}{dx} y(x) = y(x)$  (4)
> SolucionParticular := y(x) = exp(x)
      SolucionParticular :=  $y(x) = e^x$  (5)
> Comprobacion := eval(subs(y(x) = rhs(SolucionParticular), lhs(Ecuacion) - rhs(Ecuacion)
      = 0))
      Comprobacion :=  $0 = 0$  (6)
> SolucionGeneral := y(x) = _C1·exp(x)
      SolucionGeneral :=  $y(x) = \_C1 e^x$  (7)
> Comprobacion := eval(subs(y(x) = rhs(SolucionGeneral), lhs(Ecuacion) - rhs(Ecuacion)
      = 0))
      Comprobacion :=  $0 = 0$  (8)
> SolucionParticularDos := y(x) = sqrt(2)·exp(x)
      SolucionParticularDos :=  $y(x) = \sqrt{2} e^x$  (9)
> Comprobacion := eval(subs(y(x) = rhs(SolucionParticularDos), lhs(Ecuacion)
      - rhs(Ecuacion) = 0))
      Comprobacion :=  $0 = 0$  (10)
> restart
> Ecua := y''-5·y'+6 y=0
      Ecua :=  $\frac{d^2}{dx^2} y(x) - 5 \left( \frac{d}{dx} y(x) \right) + 6 y(x) = 0$  (11)
> SolGral := y(x) = _C1·exp(2·x) + _C2·exp(3·x)
      SolGral :=  $y(x) = \_C1 e^{2x} + \_C2 e^{3x}$  (12)
> Comprobacion := eval(subs(y(x) = rhs(SolGral), lhs(Ecua) - rhs(Ecua) = 0))
      Comprobacion :=  $0 = 0$  (13)
>
> SolGral
       $y(x) = \_C1 e^{2x} + \_C2 e^{3x}$  (14)
> DerSolGral := diff(SolGral, x)
      DerSolGral :=  $\frac{d}{dx} y(x) = 2 \_C1 e^{2x} + 3 \_C2 e^{3x}$  (15)
> DerDosSolGral := diff(DerSolGral, x)
      (16)

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$$DerDosSolGral := \frac{d^2}{dx^2} y(x) = 4_C1 e^{2x} + 9_C2 e^{3x} \quad (16)$$

> ParaDos := isolate((DerSolGral·(-2) + DerDosSolGral), _C2)

$$ParaDos :=_C2 = -\frac{1}{3} \frac{2 \left(\frac{d}{dx} y(x) \right) - \left(\frac{d^2}{dx^2} y(x) \right)}{e^{3x}} \quad (17)$$

> ParaUno := isolate(subs(_C2 = rhs(ParaDos), DerSolGral), _C1)

$$ParaUno :=_C1 = -\frac{1}{2} \frac{-3 \left(\frac{d}{dx} y(x) \right) + \frac{d^2}{dx^2} y(x)}{e^{2x}} \quad (18)$$

> EcuaDif := 6·subs(_C1 = rhs(ParaUno), _C2 = rhs(ParaDos), SolGral)

$$EcuaDif := 6 y(x) = 5 \left(\frac{d}{dx} y(x) \right) - \left(\frac{d^2}{dx^2} y(x) \right) \quad (19)$$

> EcuaDifFinal := lhs(EcuaDif) - rhs(EcuaDif) = 0

$$EcuaDifFinal := \frac{d^2}{dx^2} y(x) - 5 \left(\frac{d}{dx} y(x) \right) + 6 y(x) = 0 \quad (20)$$

> restart

> Ecuacion := y''' + 4·y'' - 6 y' + 8 y = 0

$$Ecuacion := \frac{d^3}{dx^3} y(x) + 4 \left(\frac{d^2}{dx^2} y(x) \right) - 6 \left(\frac{d}{dx} y(x) \right) + 8 y(x) = 0 \quad (21)$$