

```

> restart
> Ecua := (4·x³·y² - 9·x²·y³ + 16·x·y⁴ + 5·y⁵) + (2·x⁴·y - 9·x³·y² + 32·x²·y³ + 25·x·y⁴)·y' = 0
Ecua := 4 x³ y(x)² - 9 x² y(x)³ + 16 x y(x)⁴ + 5 y(x)⁵ + (2 x⁴ y(x) - 9 x³ y(x)² + 32 x² y(x)³ + 25 x y(x)⁴) (1)
      + 25 x y(x)⁴) ( d
                      dx
                      y(x) ) = 0
=
> with(DEtools) :
> odeadvisor(Ecua)
      [[_homogeneous, class A], _exact, _rational, _dAlembert] (2)
=
> M := 4 x³ y² - 9 x² y³ + 16 x y⁴ + 5 y⁵
      M := 4 x³ y² - 9 x² y³ + 16 x y⁴ + 5 y⁵ (3)
=
> N := (2·x⁴·y - 9·x³·y² + 32·x²·y³ + 25·x·y⁴)
      N := 2 x⁴ y - 9 x³ y² + 32 x² y³ + 25 x y⁴ (4)
=
> IntMx := int(M, x)
      IntMx := x⁴ y² - 3 x³ y³ + 8 x² y⁴ + 5 x y⁵ (5)
=
> SolGralUno := IntMx + int( (N - diff(IntMx, y)), y) = _CI
      SolGralUno := x⁴ y² - 3 x³ y³ + 8 x² y⁴ + 5 x y⁵ = _CI (6)
=
> IntNy := int(N, y)
      IntNy := x⁴ y² - 3 x³ y³ + 8 x² y⁴ + 5 x y⁵ (7)
=
> SolGralDos := IntNy + int( (M - diff(IntNy, x)), x) = _CI
      SolGralDos := x⁴ y² - 3 x³ y³ + 8 x² y⁴ + 5 x y⁵ = _CI (8)
=
> SolGralFinal := subs(y=y(x), SolGralUno)
      SolGralFinal := x⁴ y(x)² - 3 x³ y(x)³ + 8 x² y(x)⁴ + 5 x y(x)⁵ = _CI (9)
=
> DerSolGral := simplify(isolate(diff(SolGralFinal, x), diff(y(x), x)))
      DerSolGral := d
                    dx
                    y(x) = - y(x) (5 y(x)³ + 16 y(x)² x - 9 y(x) x² + 4 x³)
                        x (25 y(x)³ + 32 y(x)² x - 9 y(x) x² + 2 x³) (10)
=
> DerEcua := simplify(isolate(Ecua, diff(y(x), x)))
      DerEcua := d
                 dx
                 y(x) = - y(x) (5 y(x)³ + 16 y(x)² x - 9 y(x) x² + 4 x³)
                     x (25 y(x)³ + 32 y(x)² x - 9 y(x) x² + 2 x³) (11)
=
> Comprobar := simplify(rhs(DerSolGral) - rhs(DerEcua)) = 0
      Comprobar := 0 = 0 (12)
=
> SolGralAbsurda := dsolve(Ecua)
      SolGralAbsurda := y(x) = 0, x⁴ y(x)² - 3 x³ y(x)³ + 8 x² y(x)⁴ + 5 x y(x)⁵ + _CI = 0 (13)
>

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