

> restart

> EcuaNoLineal := (y(x)·2 + x·y(x)·2)·diff(y(x), x) + x·2 - y(x)·x·2 = 0

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

> SolGralDirecta := dsolve(EcuaNoLineal)

SolGralDirecta := y(x) (2)

$$= \left(e^{\text{RootOf}(2_Z e^2_Z + x^2 e^2_Z - 2x e^2_Z - 3 e^2_Z - 4 e^Z - 4 e^Z x - 1 - 2x - x^2 + 2_Cl e^2_Z)} + 1 \right. \\ \left. + x \right) e^{-\text{RootOf}(2_Z e^2_Z + x^2 e^2_Z - 2x e^2_Z - 3 e^2_Z - 4 e^Z - 4 e^Z x - 1 - 2x - x^2 + 2_Cl e^2_Z)}$$

> M(x, y) := factor(x^2 - y·x^2)

$$M(x, y) := -x^2 (-1 + y) \quad (3)$$

> N(x, y) := factor(y^2 + x y^2)

$$N(x, y) := y^2 (1 + x) \quad (4)$$

> P(x) := -x^2; Q(y) := -1 + y; R(x) := 1 + x; S(y) := y^2

$$P(x) := -x^2 \\ Q(y) := -1 + y \\ R(x) := 1 + x \\ S(y) := y^2 \quad (5)$$

> MM(x) := simplify\left(\frac{M(x, y)}{R(x) \cdot Q(y)}\right)

$$MM(x) := -\frac{x^2}{1 + x} \quad (6)$$

> NN(y) := simplify\left(\frac{N(x, y)}{R(x) \cdot Q(y)}\right)

$$NN(y) := \frac{y^2}{-1 + y} \quad (7)$$

> SolGral := int(NN(y), y) + int(MM(x), x) = C

$$SolGral := y + \frac{1}{2} y^2 + \ln(-1 + y) - \frac{1}{2} x^2 + x - \ln(1 + x) = C \quad (8)$$

> restart

> Ecua := 3·exp(x)·tan(y(x)) + (2 - exp(x))·sec(y(x))·2·diff(y(x), x) = 0

$$Ecua := 3 e^x \tan(y(x)) + (2 - e^x) \sec(y(x))^2 \left(\frac{d}{dx} y(x) \right) = 0 \quad (9)$$

> SolGral := dsolve(Ecua)

SolGral := y(x) = $\frac{1}{2} \arctan\left((2_Cl (-8 + 12 e^x - 6 e^{2x} + e^{3x})) / (1 - 192_Cl^2 e^x \right.$ (10)

$$+ 240_Cl^2 e^{2x} - 160_Cl^2 e^{3x} + 60_Cl^2 e^{4x} - 12_Cl^2 e^{5x} +_Cl^2 e^{6x} + 64_Cl^2), \\ - (64_Cl^2 - 192_Cl^2 e^x + 240_Cl^2 e^{2x} - 160_Cl^2 e^{3x} + 60_Cl^2 e^{4x} - 12_Cl^2 e^{5x} \\ +_Cl^2 e^{6x} - 1) / (1 - 192_Cl^2 e^x + 240_Cl^2 e^{2x} - 160_Cl^2 e^{3x} + 60_Cl^2 e^{4x}$$

$$-12_CI^2 e^{5x} +_CI^2 e^{6x} + 64_CI^2))$$

> $P(x) := 3 \cdot \exp(x);$

$$P(x) := 3 \, \mathrm{e}^x \tag{11}$$

> $Q(y) := \tan(y)$

$$Q(y) := \tan(y) \quad (12)$$

> $R(x) := 2 - \exp(x)$

$$R(x) := 2 - e^x \quad (13)$$

$$\textcolor{red}{>} S(y) := \sec(y)^2$$

$$\mathcal{S}(y) := \sec(y)^2 \quad (14)$$

$$\triangleright \text{SolGral} := \text{int}\left(\frac{P(x)}{R(x)}, x\right) + \text{int}\left(\frac{S(y)}{Q(y)}, y\right) = C$$

$$SolGral := -3 \ln(2 - e^x) + \ln(\tan(y)) = C \quad (15)$$

> *restart*

$$\triangleright Ecua := diff(y(x), x) + \frac{y(x)}{x} = 0$$

$$E_{cua} := \frac{d}{dx} y(x) + \frac{y(x)}{x} = 0 \quad (16)$$

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> SolGral := dsolve(Ecua)
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$$SolGral := y(x) = \frac{Cl}{x} \quad (17)$$

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