```
> restart
```

```
> Ecuacion := exp(y(x))·(1+x²)·diff(y(x), x) − 2·x·(1 + exp(y(x))) = 0
```

$$Ecuacion := e^{y(x)} \left(x^2 + 1\right) \left(\frac{d}{dx} y(x)\right) - 2\,x\left(1 + e^{y(x)}\right) = 0 \tag{1}$$

```
> EcuaDos := exp(y)·(1+x²)·y'−2·x·(1+exp(y)) = 0
```

$$EcuaDos := e^{y(x)} \left(x^2 + 1\right) \left(\frac{d}{dx} y(x)\right) - 2\,x\left(1 + e^{y(x)}\right) = 0 \tag{2}$$

```
> with(DEtools):
> odeadvisor(Ecuacion)
```

$$[\_separable] \tag{3}$$

```
> P := −2·x; Q := (1 + e^y)
```

$$P := -2\,x$$
$$Q := 1 + e^y \tag{4}$$

```
> R := (x² + 1); S := e^y
```

$$R := x^2 + 1$$
$$S := e^y \tag{5}$$

```
> SolGral := int(P/R, x) + int(S/Q, y) = _C1
```

$$SolGral := -\ln\left(x^2 + 1\right) + \ln\left(1 + e^y\right) = \_C1 \tag{6}$$

```
> SolGralDos := simplify(exp(lhs(SolGral))) = _C10
```

$$SolGralDos := \frac{1 + e^y}{x^2 + 1} = \_C10 \tag{7}$$

```
> SolGralCompleta := (1 + e^{y(x)})/(x² + 1) = _C10
```

$$SolGralCompleta := \frac{1 + e^{y(x)}}{x^2 + 1} = \_C10 \tag{8}$$

```
> EcuacionUno := isolate(diff(SolGralCompleta, x), diff(y(x), x))
```

$$EcuacionUno := \frac{d}{dx} y(x) = \frac{2\left(1 + e^{y(x)}\right) x}{\left(x^2 + 1\right) e^{y(x)}} \tag{9}$$

```
> EcuacionDiez := isolate(Ecuacion, diff(y(x), x))
```

$$EcuacionDiez := \frac{d}{dx} y(x) = \frac{2\left(1 + e^{y(x)}\right) x}{\left(x^2 + 1\right) e^{y(x)}} \tag{10}$$

```
> Comprobar := simplify(rhs(EcuacionUno) − rhs(EcuacionDiez)) = 0
```

$$Comprobar := 0 = 0 \tag{11}$$

```
> SolGralVeinte := isolate(SolGralDos, y)
```

$$SolGralVeinte := y = \ln\left(\_C10\,x^2 + \_C10 - 1\right) \tag{12}$$

```
> ComprobarVeintiuno := simplify(eval(subs(y(x) = rhs(SolGralVeinte), Ecuacion)))
```

$$ComprobarVeintiuno := 0 = 0 \tag{13}$$

```
> SolSol := dsolve(Ecuacion)
```

$$SolSol := y(x) = \ln\left(\_C1\,x^2 + \_C1 - 1\right) \tag{14}$$