```
> restart
> Ecua := 2·y·(y'+2) - x·y'^2 = 0
```

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

```
> Sol := dsolve(Ecua) :
> Sol4 := subs(_C1 = -_C/2, simplify(Sol[3])); Sol[1]; Sol[2]
```

$$Sol4 := y(x)=\frac{(-x+\_C)^2}{\_C}$$

$$y(x)=-4\,x$$

$$y(x)=0 \tag{2}$$

```
> SolPartUno := subs(_C = 1, Sol4)
```

$$SolPartUno := y(x)=(-x+1)^2 \tag{3}$$

```
> SolPartDos := subs(_C = -9, Sol4)
```

$$SolPartDos := y(x)=-\frac{1}{9}(-x-9)^2 \tag{4}$$

```
> CompUno := simplify(eval(subs(y(x) = rhs(SolPartUno), Ecua)))
```

$$CompUno := 0=0 \tag{5}$$

```
> CompSeis := simplify(eval(subs(y(x) = rhs(SolPartDos), Ecua)))
```

$$CompSeis := 0=0 \tag{6}$$

```
> CompDos := simplify(eval(subs(y(x) = rhs(Sol[1]), Ecua)))
```

$$CompDos := 0=0 \tag{7}$$

```
> CompTres := simplify(eval(subs(y(x) = rhs(Sol[2]), Ecua)))
```

$$CompTres := 0=0 \tag{8}$$

```
> CompCuatro := simplify(eval(subs(y(x) = rhs(Sol4), Ecua)))
```

$$CompCuatro := 0=0 \tag{9}$$

```
> restart
> Ecua := y''-9 y'+20 y = 0
```

$$Ecua := \frac{d^2}{dx^2}y(x)-9\left(\frac{d}{dx}y(x)\right)+20\,y(x)=0 \tag{10}$$

```
> SolGral := dsolve(Ecua)
```

$$SolGral := y(x)=\_C1\,e^{4x}+\_C2\,e^{5x} \tag{11}$$

```
> Cond := y(0) = 6, D(y)(0) = -4
```

$$Cond := y(0)=6,\ D(y)(0)=-4 \tag{12}$$

```
> EcuaUno := eval(subs(x = 0, rhs(SolGral) = 6))
```

$$EcuaUno := \_C1+\_C2=6 \tag{13}$$

```
> EcuaDos := eval(subs(x = 0, rhs(diff(SolGral, x)) = -4))
```

$$EcuaDos := 4\,\_C1+5\,\_C2=-4 \tag{14}$$

```
> ParaUno := isolate(EcuaUno, _C1)
```

$$ParaUno := \_C1=6-\_C2 \tag{15}$$

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

$$ParaDos := \_C2=-28 \tag{16}$$

```
> ParaTres := subs( C2 = rhs(ParaDos), ParaUno)
```

$$ParaTres := \_C1 = 34 \quad \textbf{(17)}$$

> $SolPartUno := subs(\_C1 = rhs(ParaTres), \_C2 = rhs(ParaDos), SolGral)$

$$SolPartUno := y(x) = 34\, e^{4x} - 28\, e^{5x} \quad \textbf{(18)}$$

> $SolPartDos := dsolve(\{Ecua, Cond\})$

$$SolPartDos := y(x) = 34\, e^{4x} - 28\, e^{5x} \quad \textbf{(19)}$$

>