```
> restart
> Ecua := diff(z(x,y),x$2)-5·diff(z(x,y),x,y)+6·diff(z(x,y),y$2)=0
```

$$Ecua := \frac{\partial^2}{\partial x^2} z(x,y) - 5\left(\frac{\partial^2}{\partial y\,\partial x} z(x,y)\right) + 6\left(\frac{\partial^2}{\partial y^2} z(x,y)\right) = 0 \quad (1)$$

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

$$SolGral := z(x,y) = \_F1(y+2x) + \_F2(y+3x) \quad (2)$$

```
> Comp := simplify(eval(subs(z(x,y)=rhs(SolGral),Ecua)))
```

$$Comp := 0 = 0 \quad (3)$$

```
> with(PDEtools):
> with(DEtools):
> SolPart := z(x,y)=10·exp(y)·exp(2x)
```

$$SolPart := z(x,y) = 10\,e^{y}\,e^{2x} \quad (4)$$

```
> CompDos := simplify(eval(subs(z(x,y)=rhs(SolPart),Ecua)))
```

$$CompDos := 0 = 0 \quad (5)$$

```
> SolPartDos := z(x,y)=10·exp(y)·exp(-2x)
```

$$SolPartDos := z(x,y) = 10\,e^{y}\,e^{-2x} \quad (6)$$

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

$$CompDosMedio := 200\,e^{y-2x} = 0 \quad (7)$$

```
> SolPartTres := z(x,y)=(y+2·x)^3+5·cos(y+3x)
```

$$SolPartTres := z(x,y) = (y+2x)^3 + 5\cos(y+3x) \quad (8)$$

```
> CompTres := simplify(eval(subs(z(x,y)=rhs(SolPartTres),Ecua)))
```

$$CompTres := 0 = 0 \quad (9)$$

```
> restart
> Ecua := diff(z(x,y),x$2)+2·diff(z(x,y),x,y)+diff(z(x,y),y$2)=0
```

$$Ecua := \frac{\partial^2}{\partial x^2} z(x,y) + 2\left(\frac{\partial^2}{\partial y\,\partial x} z(x,y)\right) + \frac{\partial^2}{\partial y^2} z(x,y) = 0 \quad (10)$$

```
> SolGralUno := pdsolve(Ecua)
```

$$SolGralUno := z(x,y) = \_F1(y-x) + \_F2(y-x)\,x \quad (11)$$

```
> Comp := simplify(eval(subs(z(x,y)=rhs(SolGralUno),Ecua)))
```

$$Comp := 0 = 0 \quad (12)$$

```
> SolGralDos := z(x,y)=_F1(y-x)+_F2(y-x)·y
```

$$SolGralDos := z(x,y) = \_F1(y-x) + \_F2(y-x)\,y \quad (13)$$

```
> CompDos := simplify(eval(subs(z(x,y)=rhs(SolGralDos),Ecua)))
```

$$CompDos := 0 = 0 \quad (14)$$

```
>
>
>
>
>
```