```
> restart : with(LinearAlgebra) :
> V := -cos(3·(x - y))·cos(z + y)·cos(5·(x + y))
```

$$V := -\cos(3x - 3y)\cos(z + y)\cos(5x + 5y) \quad (1)$$

```
> H := Matrix([[diff(V, x, x), diff(V, x, y), diff(V, x, z)], [diff(V, y, x), diff(V, y, y),
      diff(V, y, z)], [diff(V, z, x), diff(V, z, y), diff(V, z, z)]]) :
> H := eval(H, [x = 0, y = 0, z = 0])
```

$$H := \begin{bmatrix} 34 & 16 & 0 \\ 16 & 35 & 1 \\ 0 & 1 & 1 \end{bmatrix} \quad (2)$$

```
> J, Q := JordanForm(H, output = ['J', 'Q']) :
> evalf(J)
```

$$[[50.51822645 - 5. \times 10^{-9}\,I,\ 0.,\ 0.],\ [0.,\ 18.51981170 + 1.932050808 \times 10^{-8}\,I,\ 0.],\ [0.,\ 0.,\ 0.961961840 - 1.532050808 \times 10^{-8}\,I]] \quad (3)$$

```
> # dus w_1^2 = 50.51, w_2^2 = 18.51, w_3^2 = 0.96
>
```