

```
[> with(LinearAlgebra):
> A := Matrix([[0, -1, 3, 0], [1, 0, 0, 1], [0, 0, 3, -1], [0, 0, 1, 1]])
```

$$A := \begin{bmatrix} 0 & -1 & 3 & 0 \\ 1 & 0 & 0 & 1 \\ 0 & 0 & 3 & -1 \\ 0 & 0 & 1 & 1 \end{bmatrix}$$

(1)

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

$$J, Q := \begin{bmatrix} -I & 0 & 0 & 0 \\ 0 & I & 0 & 0 \\ 0 & 0 & 2 & 1 \\ 0 & 0 & 0 & 2 \end{bmatrix}, \begin{bmatrix} -\frac{1}{2} & -\frac{1}{2} & 1 & 1 \\ -\frac{1}{2} & \frac{1}{2} & 1 & 0 \\ 0 & 0 & 1 & 1 \\ 0 & 0 & 1 & 0 \end{bmatrix}$$

(2)

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[>
```