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> restart : with(LinearAlgebra) : with(plots) : with(plottools) : assume(k,
  'integer') :
> A := Matrix([[1, a], [1, 0]]) :
> J, Q := JordanForm(A, output = ['J', 'Q'])

```

$$J, Q := \begin{bmatrix} \frac{1}{2} - \frac{\sqrt{1+4a}}{2} & 0 \\ 0 & \frac{1}{2} + \frac{\sqrt{1+4a}}{2} \end{bmatrix}, \begin{bmatrix} \frac{\sqrt{1+4a}-1}{2\sqrt{1+4a}} & \frac{1+\sqrt{1+4a}}{2\sqrt{1+4a}} \\ -\frac{1}{\sqrt{1+4a}} & \frac{1}{\sqrt{1+4a}} \end{bmatrix} \quad (1)$$

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> # We see that lambda_2 is dominating

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$$sol := \frac{\frac{1+\sqrt{1+4a}}{2\sqrt{1+4a}}}{\frac{1}{\sqrt{1+4a}}}$$

$$sol := \frac{1}{2} + \frac{\sqrt{1+4a}}{2} \quad (2)$$

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> solve(sol = 3)

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$$6 \quad (3)$$

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>

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