

Essential Maple 7

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Chapter 1: Basics

Section 1.1: Getting Started

Session: 1.1.6: Saving work

- > **restart;**
- > **with(LinearAlgebra):**
- > **A := RandomMatrix(3, 3);**

$$A := \begin{bmatrix} -21 & -50 & -79 \\ -56 & 30 & -71 \\ -8 & 62 & 28 \end{bmatrix}$$

- > **p := CharacteristicPolynomial(Transpose(A).A, x);**

$$p := -1478094916 + 114521881 x - 22951 x^2 + x^3$$

> **rts := [fsolve(p, x, complex)];**

$$rts := [12.94019843, 7308.069806, 15629.99000]$$

> **rootBounds := realroot(p, 1/10^8);**

$$rootBounds := \left[\left[\frac{1736804033}{134217728}, \frac{868402017}{67108864} \right], \left[\frac{980872525423}{134217728}, \frac{61304532839}{8388608} \right], \left[\frac{1048910872935}{67108864}, \frac{2097821745871}{134217728} \right] \right]$$

> **evalf(rootBounds,15);**

$$[[12.9401984289289, 12.9401984363794], [7308.06980597228, 7308.06980597973], [15629.9899955839, 15629.9899955913]]$$

> **save A, p, `mymatrix.mpl`;**

> **save p, rts, rootBounds, `myroots.m`;**

>