Result

You entered matrix

$$A = \begin{bmatrix} \frac{2}{9} & \frac{1}{9} & -\frac{2}{9} \\ \frac{1}{9} & \frac{2}{9} & -\frac{1}{9} \\ -\frac{2}{9} & -\frac{1}{9} & \frac{2}{9} \end{bmatrix}$$

The characteristic polynomial of matrix A is:

$$p(x) = -x^3 + \frac{2\,x^2}{3} - \frac{2\,x}{27}$$