

Console

A=

$$\begin{pmatrix} 2 & 2 & 2 \\ 2 & 5 & 5 \\ 2 & 5 & 1 \end{pmatrix}$$

A1=

$$\begin{pmatrix} 2 & 2 & 2 \\ 2 & 5 & 5 \\ 2 & 5 & 1 \end{pmatrix}$$

C1=

8.

A2=

$$\begin{pmatrix} -4 & 8 & 0 \\ 8 & 14 & -6 \\ 0 & -6 & 22 \end{pmatrix}$$

C2=

16.

A3=

$$\begin{pmatrix} -24 & 0 & 0 \\ 0 & -24 & 0 \\ 0 & 0 & -24 \end{pmatrix}$$

C3=

- 24.

Therefore the characteristic polynomial is:

$$\lambda^3 - 8\lambda^2 - 16\lambda - 24 = 0$$