

$$-4 \quad -3 \quad -2 \quad -1 \quad 0 \quad 1$$

$$124 \rightarrow 7$$

A4. a)

$$\begin{pmatrix} 1 & 1 & 1 \\ 2 & e+2 & 5 \\ 4 & 6 & 8 \end{pmatrix} \xrightarrow{I \cdot -2} \begin{pmatrix} 1 & 1 & 1 \\ 0 & e & 3 \\ 4 & 6 & 8 \end{pmatrix} \xrightarrow{I \cdot 4} \begin{pmatrix} 1 & 1 & 1 \\ 0 & e & 3 \\ 0 & 2 & 4 \end{pmatrix} \xrightarrow{II \cdot (-\frac{2}{e})}$$

$$\rightarrow \begin{pmatrix} 1 & 1 & 1 \\ 0 & e & 3 \\ 0 & 0 & \frac{4e-6}{e} \end{pmatrix} \quad L = \begin{pmatrix} 1 & 0 & 0 \\ 2 & 1 & 0 \\ 4 & \frac{2}{e} & 1 \end{pmatrix} \quad R = \begin{pmatrix} 1 & 1 & 1 \\ 0 & e & 3 \\ 0 & 0 & \frac{4e-6}{e} \end{pmatrix}$$

A6. a) $A = \begin{pmatrix} 13 & -4 \\ 30 & -9 \end{pmatrix} \rightarrow \text{Char. Polynom } \lambda^2 - 4\lambda + 3$

$$\begin{vmatrix} -\lambda + 13 & -4 \\ 30 & -\lambda - 9 \end{vmatrix} = (-\lambda + 13) \cdot (-\lambda - 9) - (-4) \cdot 30 = \lambda - 4\lambda + 3$$

$\lambda_1 = 1 \rightarrow \begin{pmatrix} 12 & -4 \\ 30 & -10 \end{pmatrix} \begin{pmatrix} x_1 \\ x_2 \end{pmatrix} = \begin{pmatrix} 0 \\ 0 \end{pmatrix}$

$$x_2 = x_2$$

$\lambda_2 = 3$

$$\hookrightarrow \begin{pmatrix} \frac{1}{2} \cdot x_2 \\ x_2 \end{pmatrix} = x$$

$$x_2 \cdot \begin{pmatrix} \frac{1}{2} \\ 1 \end{pmatrix}$$

$$\hookrightarrow x_1 = \frac{2}{5} \cdot x_2$$

$$x_2 = x_2$$

$$\hookrightarrow x = \begin{pmatrix} \frac{2}{5} \cdot x_2 \\ x_2 \end{pmatrix} = x_2 \cdot \begin{pmatrix} \frac{2}{5} \\ 1 \end{pmatrix}$$