Tutorial problems :

① Find by Newton's method, the root of $e^x = 4x$ correct to four decimal places.

② Using Gauss Elimination method solve the following equations

$$10x + y + z = 12$$
$$2x + 10y + z = 13$$
$$x + y + 5z = 7$$

③. Find the inverse of the matrix by Gauss-Jordan method

$$\begin{bmatrix} 0 & 1 & 2 \\ 1 & 2 & 3 \\ 3 & 1 & 1 \end{bmatrix}$$

④ Solve by Gauss-Seidel method

$$8x + y + z = 8$$
$$2x + 4y + z = 4$$
$$x + 3y + 5z = 5$$

⑤ Find, by power method, the largest eigenvalue and the corresponding eigen vector of a matrix

$$A = \begin{bmatrix} 1 & 3 & -1 \\ 3 & 2 & 4 \\ -1 & 4 & 10 \end{bmatrix}.$$