5.4.1

EE25BTECH11006-ADUDOTLA SRIVIDYA

Question:
Using elementary transformations, find the inverse of the following matrix.

$$\begin{pmatrix} 2 & 3 \\ -4 & -6 \end{pmatrix}$$

Solution:
The determinant is:

$$\det\begin{pmatrix} 2 & 3 \\ -4 & -6 \end{pmatrix} = (2)(-6) - (3)(-4) = -12 + 12 = 0 \tag{0.1}$$

Since the determinant is zero, the matrix is singular and hence **not invertible**.