Matrices and Determinants - Class XII

Related Questions with Solutions

Questions

Quetion: 01

If $A = \begin{pmatrix} 2 & 2 \\ 9 & 4 \end{pmatrix}$ and $I = \begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}$, then $10A^{-1}$ is equal to:

A. $4I - A$
B. $6I - A$
C. $A - 6I$
D. $A - 4I$

Solutions

Solution: 01

$det(A - xI) = 0$

$$\begin{vmatrix} 2-x & 2 \\ 9 & 4-x \end{vmatrix} = 0$$

$(2 - x)(4 - x) - 18 = 0$

$8 + x^2 - 6x - 18 = 0$

$x^2 - 6x - 10 = 0$

$\left[A^2 - 6A - 10I = O\right] \times A^{-1}$

$A - 6I - 10A^{-1} = O$

$10A^{-1} = A - 6I$

Correct Options

Answer:01
Correct Options: C