



If $A = \begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 1 \\ 0 & -2 & 4 \end{bmatrix}$ & $I = \begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$ and $A^{-1} = \frac{1}{6}(A^2 + cA + dI)$, then the ordered pair (c, d) is:

Solution:

$$A = \begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 1 \\ 0 & -2 & 4 \end{bmatrix}$$

$$A^3 - 6A^2 + 11A - 6I = 0$$

$$A^{-1}A^3 - 6A^{-1}A^2 + 11A^{-1}A - 6A^{-1}I = 0$$

$$6A^{-1} = A^2 - 6A + 11I$$

$$\Rightarrow A^{-1} = \frac{1}{6}(A^2 - 6A + 11I)$$

$$(c, d) \equiv (-6, 11)$$

A

$(-6, -11)$

B

$(6, -11)$

C

$(-6, 11)$

D

$(6, 11)$