



If  $A = \begin{pmatrix} 2 & -3 \\ -4 & 1 \end{pmatrix}$ , then  $\text{adj} (3A^2 + 12A)$  is equal to :

Solution:

$$A = \begin{pmatrix} 2 & -3 \\ -4 & 1 \end{pmatrix}$$

$$\Rightarrow 3A^2 = 3 \begin{pmatrix} 2 & -3 \\ -4 & 1 \end{pmatrix} \begin{pmatrix} 2 & -3 \\ -4 & 1 \end{pmatrix} = 3 \begin{pmatrix} 16 & -9 \\ -12 & 13 \end{pmatrix} = \begin{pmatrix} 48 & -27 \\ -36 & 39 \end{pmatrix}$$

$$12A = 12 \begin{pmatrix} 2 & -3 \\ -4 & 1 \end{pmatrix} = \begin{pmatrix} 24 & -36 \\ -48 & 12 \end{pmatrix}$$

$$3A^2 + 12A = \begin{pmatrix} 72 & -63 \\ -84 & 51 \end{pmatrix}$$

$$\text{adj} (3A^2 + 12A) = \begin{pmatrix} 51 & 63 \\ 84 & 72 \end{pmatrix}$$

A

$$\begin{pmatrix} 72 & -84 \\ -63 & 51 \end{pmatrix}$$

B

$$\begin{pmatrix} 51 & 63 \\ 84 & 72 \end{pmatrix}$$

C

$$\begin{pmatrix} 51 & 84 \\ 63 & 72 \end{pmatrix}$$

D

$$\begin{pmatrix} 72 & -63 \\ -84 & 51 \end{pmatrix}$$