

Questions	JEE Main Crash Course
1. $\begin{array}{c} \text{mathongo} \\ \text{Let } A + 2B = \begin{bmatrix} 1 & m_2 & m_2 & m_3 \\ 6 & -3 & 3 \\ -5 & 3 & 1 \end{bmatrix} \text{ and } 2A - B = \begin{bmatrix} 2 & -1 & 5 \\ 2 & -1 & 6 \\ 0 & 1 & 2 \end{bmatrix} \text{ then } tr(A) - tr(A)$	/// mathongo // mathongo /// ma
	(2) 1athongo // mathongo // mathongo // n (4) None of these
<b>2.</b> The trace $T_r(A)$ of a $3 \times 3$ matrix $A = (a_{jj})$ is defined by the relation $T_r(A)$	$a = a_{11} + a_{22} + a_{33}$ (i.e, $T_r(A)$ is sum of the main diagonal elements). Which of the
(1) $T_r(kA) = kT_r(A)(k \text{ is a scalar})$	(2) $T_r(A+B) = T_r(A) + T_r(B)$
(3) $T_r(l_3) = 3$	(4) $T_r(A^2) = (T_r(A))^2$
(1) $T_r(kA) = kT_r(A)(k \text{ is a scalar})$ (3) $T_r(l_3) = 3$ 3. Let $A\begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$ and $B = \begin{bmatrix} a & b \\ c & d \end{bmatrix}$ are two matrices such that $AB = BA$ and	$c \neq 0$ , then value of $\frac{a-d}{3b-c}$ is
(3) thongo /// mathongo /// mathongo /// mathongo	(2) 2 (4) —1 mathongo /// mathongo /// mathongo /// mathongo /// n
4. If $A = \begin{bmatrix} i & -i \\ -i & i \end{bmatrix}$ , $B = \begin{bmatrix} 1 & -1 \\ -1 & 1 \end{bmatrix}$ , then $A^8$ equals  (1) $AB$	
$(1)^{4}$ $(1)^$	(2) 128B ongo /// mathongo /// mathongo /// mathongo /// n
(3) -128B	(4) - 64B
5. If $A = \begin{bmatrix} 0 & 5 \\ 0 & 0 \end{bmatrix}$ and $f(x) = 1 + x + x^2 + \dots + x^{16}$ , then $f(A)$ is equal to	-//. mathongo //. mathongo //. mathongo //. mathongo //. n
(1) 0	$(2) \begin{bmatrix} 1 & 5 \end{bmatrix}$
$(3)$ ° $\begin{bmatrix} 1_0 & 5 \\ 0 & 0 \end{bmatrix}$ ° $(4)$ mathongo $(4)$ mathongo $(4)$ mathongo	(2) $\begin{bmatrix} 1 & 5 \\ 0 & 1 \end{bmatrix}$ (4) $\begin{bmatrix} 0 & 1 \\ 1 & 1 \end{bmatrix}$ mathongo /// mathongo /// mathongo /// mathongo
mathongo // matho	the of $n \in N$ for which $P^n = 5I - 8P$ is equal to
7. Which of the following is correct?	
(1) $B'AB$ is symmetric, if $A$ is symmetric	(2) B' AB is skew symmetric, if A is symmetric
(3) B' AB is symmetric, if A is skew symmetric 190 /// mathongo	(4) None of these // mathongo // mathongo // n
8. The number of diagonal matrix A of order n for which $A^3 = A$ , is	
<b>8.</b> The number of diagonal matrix $A$ of order $n$ for which $A^3 = A$ , is (1) 1	(2) 0
8. The number of diagonal matrix $A$ of order $n$ for which $A^3 = A$ , is  (1) 1  (3) $2^n$ ongo	(2) 0 (4) 3 <sup>n</sup> thongo ///. mathongo ///. mathongo ///. n
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