

Class 12 Matrices and Determinants Test 2, 2027

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Maximum Marks: 35

Duration: 75 mins

1 marks questions

1. If $A = \begin{bmatrix} -1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$, then find A^{-1}
2. If A is a square matrix of order 2 such that $\det(A) = 4$, then find $\det(4 \text{ Adj } A)$
3. Let $A = \begin{bmatrix} 1 & -2 & 1 \\ 0 & 4 & -1 \\ -3 & 2 & 1 \end{bmatrix}$, $B = \begin{bmatrix} -2 \\ -5 \\ -7 \end{bmatrix}$, $C = [9 \ 8 \ 7]$, which of the following is defined
 - a. Only AB
 - b. Only AC
 - c. Only BA
 - d. All AB, AC and BA

2 marks questions

4. If $[x \ 4 \ 1] \begin{bmatrix} 2 & 1 & 2 \\ 1 & 0 & 2 \\ 0 & 2 & -4 \end{bmatrix} \begin{bmatrix} x \\ 4 \\ -1 \end{bmatrix} = 0$, find x .
5. Evaluate $\begin{vmatrix} a+ib & c+id \\ -c+id & a-ib \end{vmatrix}$
6. Evaluate $\begin{vmatrix} x+a & x & x \\ x & x+a & x \\ x & x & x+a \end{vmatrix}$
7. If $A = \begin{bmatrix} 0 & 0 \\ 4 & 0 \end{bmatrix}$, find A^{16}
8. Express the matrix $A = \begin{bmatrix} 3 & -4 \\ 1 & -1 \end{bmatrix}$ as the sum of symmetric and a skew-symmetric matrix

3 marks questions

9. If $\begin{bmatrix} xy & 4 \\ z+6 & x+y \end{bmatrix} = \begin{bmatrix} 8 & w \\ 0 & 6 \end{bmatrix}$, then find the value of x, y, z and w .
10. Find the matrix A such that $\begin{bmatrix} 2 & -1 \\ 1 & 0 \\ -3 & 4 \end{bmatrix} A = \begin{bmatrix} -1 & -8 & -10 \\ 1 & -2 & -5 \\ 9 & 22 & 15 \end{bmatrix}$
11. If $P(x) = \begin{bmatrix} \cos x & \sin x \\ -\sin x & \cos x \end{bmatrix}$, then show that $P(x)P(y) = P(x+y) = P(y)P(x)$
12. If the points $(x, -2), (5, 2)$ and $(8, 8)$ are collinear, find x using determinant

5 marks questions

13. For the matrix $A = \begin{bmatrix} 1 & 1 & 1 \\ 1 & 2 & -3 \\ 2 & -1 & 3 \end{bmatrix}$. Show that $A^3 - 6A^2 + 5A + 11I_3 = 0$. Hence find A^{-1}
14. If $A = \begin{bmatrix} 2 & 3 & 1 \\ 1 & 2 & 2 \\ -3 & 1 & -1 \end{bmatrix}$, find A^{-1} and hence solve the system of equations
$$\begin{aligned} 2x + y - 3z &= 13 \\ 3x + 2y + z &= 4 \\ x + 2y - z &= 8 \end{aligned}$$

[Solution to the Test](#)

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