

MATH 107-S2 1441H**MCQ FORM 5 - CH 3: DETERMINANTS**

Choose the correct answer for the following questions:

Q.1

For $A = \begin{bmatrix} 2 & 0 & 0 & 0 \\ 0 & 12 & 0 & 0 \\ 0 & 0 & -5 & 0 \\ 0 & 0 & 0 & 4 \end{bmatrix}$, $\det(A) = \dots$

- a) 0 b) -480 c) 2400 d) -240

Q.2

If A is a 3×3 matrix and $\det(A) = -7$, then $\det(A^T) = \dots$

- a) 7 b) -7 c) $-\frac{1}{7}$ d) $\frac{1}{7}$

Q.3

By using Cramer's rule for solving the following equations:

$$3x + 5y = 7, \quad 6x + 2y + 4z = 10, \quad -x + 4y - 3z = 0$$

$\det(A) = \dots$, $\det(A_2) = \dots$, and $y = \dots$

- a) 4, 8, 2 b) -1, 2, 3 c) 4, -4, -1 d) -4, 4, 1

Q.4

If $A = \begin{bmatrix} 2 & 0 & -3 \\ 0 & -3 & 2 \\ -1 & 0 & 2 \end{bmatrix}$, then the matrix of cofactors is

- a) $\begin{bmatrix} -6 & -2 & -3 \\ 0 & 1 & 0 \\ -9 & -4 & -6 \end{bmatrix}$ b) $\begin{bmatrix} 2 & 0 & -1 \\ 0 & -3 & 0 \\ -3 & 2 & 2 \end{bmatrix}$ c) $\begin{bmatrix} -6 & 0 & -9 \\ -2 & 1 & -4 \\ -3 & 0 & -6 \end{bmatrix}$ d) $\begin{bmatrix} 2 & 0 & -3 \\ 0 & -3 & 2 \\ -1 & 0 & 2 \end{bmatrix}$

Q.5

If $A = \begin{bmatrix} 2 & 3 & 5 \\ 0 & 2 & 3 \\ 0 & 0 & 1 \end{bmatrix}$, then its inverse is ...

- a) $\begin{bmatrix} -1/2 & 3/4 & 1/4 \\ 0 & -1/2 & 3/2 \\ 0 & 0 & -1 \end{bmatrix}$ b) $\begin{bmatrix} 1/2 & 1/3 & 1/5 \\ 0 & 1/2 & 1/3 \\ 0 & 0 & 1 \end{bmatrix}$ c) $\begin{bmatrix} 1/2 & -3/4 & -1/4 \\ 0 & 1/2 & -3/2 \\ 0 & 0 & 1 \end{bmatrix}$ d) $\begin{bmatrix} -2 & 3 & 1 \\ 0 & -1 & 3 \\ 0 & 0 & -1 \end{bmatrix}$
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