

MATH 107-S2 1441H

MCQ FORM 3 - CH 3: DETERMINANTS

Choose the correct answer for the following questions:

Q.1

For $A = \begin{bmatrix} 3 & 0 & 0 & 0 \\ 2 & -4 & 0 & 0 \\ 25 & -15 & 1 & 0 \\ 500 & 200 & 19 & -5 \end{bmatrix}$, $\det(A) = \dots$

- a) 60 b) -12 c) -60 d) 0

Q.2

If A is a 3×3 matrix and $\det(A) = -5$, then $\det(-4A) = \dots$

- a) 20 b) -60 c) -320 d) 320

Q.3

For what values of λ , the matrix

$A = \begin{bmatrix} \lambda - 4 & 0 & 0 \\ 0 & \lambda & 3 \\ 0 & 1 & \lambda + 2 \end{bmatrix}$ is not invertible

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

Q.4

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

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

$\det(A) = \dots$, $\det(A_3) = \dots$, and $z = \dots$

- a) -1, 2, 3 b) 4, 8, 2 c) 4, 12, 3 d) 4, -4, -1

Q.5

If $A = \begin{bmatrix} 2 & 0 & 3 \\ 0 & 3 & 2 \\ -2 & 0 & -4 \end{bmatrix}$, then the matrix of cofactors is

a) $\begin{bmatrix} -12 & 0 & -9 \\ -4 & -2 & -4 \\ 6 & 0 & 6 \end{bmatrix}$ b) $\begin{bmatrix} -6 & 0 & -9 \\ -2 & 1 & -4 \\ -3 & 0 & -6 \end{bmatrix}$ c) $\begin{bmatrix} -6 & -2 & -3 \\ 0 & 1 & 0 \\ -9 & -4 & -6 \end{bmatrix}$ d) $\begin{bmatrix} -12 & -4 & 6 \\ 0 & -2 & 0 \\ -9 & -4 & 6 \end{bmatrix}$
