Answer to Question #87347 - Math – Linear Algebra

Question:

5. Given that $A = \begin{pmatrix} 1 & 2 & 3 \\ 3 & 2 & 1 \\ 1 & 3 & 2 \end{pmatrix}$. Find the determinant of A.

a. 2   b. 3   c. 1   d. zero

6. A matrix is said to be singular if the determinant is equal to

a. 3   b. 1   c. zero   d. 2

Solution:

5. $|A| = \begin{vmatrix} 1 & 2 & 3 \\ 3 & 2 & 1 \\ 1 & 3 & 2 \end{vmatrix} = 1 \times (2 \times 2 - 1 \times 3) - 2 \times (3 \times 2 - 1 \times 1) + 3 \times (3 \times 3 - 2 \times 1)$

$= 1 - 10 + 21 = 12$.

6. A matrix is said to be singular if the determinant is equal to zero.