

This print-out should have 5 questions. Multiple-choice questions may continue on the next column or page – find all choices before answering.

001 5.0 points

An elementary row operation on an $n \times n$ matrix A does not change the value of the determinant of A .

True or False?

1. FALSE
2. TRUE

002 5.0 points

When the matrix

$$B = \begin{bmatrix} b_1 & b_2 & b_3 \\ a_{11} & a_{12} & a_{13} \\ a_{31} & a_{32} & a_{33} \end{bmatrix}$$

is obtained from

$$A = \begin{bmatrix} a_{11} & a_{12} & a_{13} \\ b_1 & b_2 & b_3 \\ a_{31} & a_{32} & a_{33} \end{bmatrix}$$

by interchanging rows 1 and 2, then

$$\det[B] = -\det[A].$$

True or False?

1. TRUE
2. FALSE

003 10.0 points

Evaluate $\det[B^5]$ when

$$B = \begin{bmatrix} 1 & 0 & 1 \\ 1 & 1 & 2 \\ 1 & 2 & 1 \end{bmatrix}.$$

1. $\det[B^5] = 10$
2. $\det[B^5] = -10$

3. $\det[B^5] = -2$

4. $\det[B^5] = -32$

5. $\det[B^5] = 32$

004 10.0 points

Find the value of the determinant

$$D = \begin{vmatrix} 1 & 2 & -1 \\ 1 & -2 & -1 \\ 2 & 1 & 3 \end{vmatrix}.$$

1. $D = -18$
2. $D = -14$
3. $D = -22$
4. $D = -20$
5. $D = -16$

005 10.0 points

Compute the determinant of the matrix

$$A = \begin{bmatrix} -1 & 1 & -2 \\ -1 & -1 & -1 \\ 2 & -4 & 2 \end{bmatrix}$$

1. $\det(A) = -4$
2. $\det(A) = -3$
3. $\det(A) = -6$
4. $\det(A) = -7$
5. $\det(A) = -5$