

QUESTION It can be shown that $\det AB = \det A \det B$ (where A, B are both $n \times n$ matrices). Illustrate this result for the following matrices:

$$A = \begin{bmatrix} 1 & 0 & 2 \\ -5 & 1 & 3 \\ 6 & -2 & 4 \end{bmatrix}, \quad B = \begin{bmatrix} 2 & 1 & 3 \\ 0 & 5 & -6 \\ 7 & -2 & 5 \end{bmatrix}.$$

ANSWER $\det A=18$ $\det B=-121$ $\det AB = -2178 = 18 \times -121$

$$AB = \begin{bmatrix} 16 & -3 & 13 \\ 11 & -6 & -6 \\ 40 & -12 & 50 \end{bmatrix}$$