Show All Solutions

Rosen, Discrete Mathematics and Its Applications, 7th edition, Global Edition
Extra Examples
Section 2.6—Matrices

Extra Examples — *Page references correspond to locations of Extra Examples icons in the textbook.*

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p.183, icon at Example 3

#1. Let $\mathbf{A} = \begin{pmatrix} 2 & 7 \\ -1 & 5 \end{pmatrix}$ and $\mathbf{B} = \begin{pmatrix} 1 & -3 \\ 4 & 2 \end{pmatrix}$. Find the products $\mathbf{AB}$ and $\mathbf{BA}$.

See Solution

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p.183, icon at Example 3

#2. Determine whether the following is true for all 2×2 matrices: $(\mathbf{A}+\mathbf{B})^2 = \mathbf{A}^2 + 2\mathbf{AB} + \mathbf{B}^2$.

See Solution

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p.183, icon at Example 3

#3. Suppose a matrix $\mathbf{A} = \begin{pmatrix} a & b \\ c & d \end{pmatrix}$ with real numbers as entries commutes under multiplication with all real 2×2 matrices. That is, $\mathbf{AB} = \mathbf{BA}$ all 2×2 matrices $\mathbf{B}$ with real numbers as entries. What form must $\mathbf{A}$ have?

See Solution