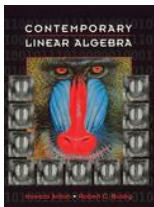


Chapter 3, Section 1 of *Contemporary Linear Algebra* by Anton and Busby



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1. Let

$$F = \begin{pmatrix} 2 & -4 & 2 \\ 6 & 0 & 8 \end{pmatrix} \quad \text{and} \quad G = \begin{pmatrix} 3 & 0 & 4 \\ 5 & -3 & 1 \end{pmatrix}$$

Then $-\frac{1}{2}F + G$ is

A $\begin{pmatrix} -7 & 4 & -6 \\ -11 & 3 & -9 \end{pmatrix}$ B $\begin{pmatrix} 5 & -9 & 6 \\ 11 & -3 & 9 \end{pmatrix}$

C $\begin{pmatrix} -2 & 1 & -3 \\ 2 & 3 & 7 \end{pmatrix}$ D $\begin{pmatrix} -2 & -2 & -3 \\ -2 & 3 & 3 \end{pmatrix}$

E $\begin{pmatrix} 2 & 3 \\ 2 & -3 & -3 \end{pmatrix}$

Next Question

2. If M is a 4×6 matrix and N is a 6×5 matrix then the matrix MN is of size

- ▶ A 5×4
- ▶ B 6×6
- ▶ C 4×5
- ▶ D 5×5
- ▶ E 4×4

Next Question

3. Find $\text{tr}(P)P - Q^T$, where

$$P = \begin{pmatrix} 1 & 1 \\ -2 & -2 \end{pmatrix} \quad \text{and} \quad Q = \begin{pmatrix} -3 & 0 \\ 2 & 1 \end{pmatrix}$$

▶ A $\begin{pmatrix} 1 & 1 \\ -2 & -2 \end{pmatrix}$ ▶ B $\begin{pmatrix} -4 & 1 \\ 2 & -3 \end{pmatrix}$

▶ C $\begin{pmatrix} 2 & -3 \\ 2 & 1 \end{pmatrix}$ ▶ D $\begin{pmatrix} -2 & 3 \\ -2 & 3 \end{pmatrix}$

▶ E $\begin{pmatrix} -4 & -1 \\ 4 & 3 \end{pmatrix}$

Next Question

4. Let

$$S = \begin{pmatrix} 1 & -2 & 3 \\ 5 & x+y & 2 \\ 0 & 0 & 4 \end{pmatrix} \quad \text{and} \quad T = \begin{pmatrix} 1 & -2 & 3 \\ 5 & 0 & 2 \\ 0 & 0 & x-2 \end{pmatrix}$$

Then $S = T$ if and only if

- ▶ A $x = 6, y = -6$
- ▶ B $x = 6, y = 6$
- ▶ C $x = -6, y = -6$
- ▶ D $x = 0, y = 6$
- ▶ E $x = 6, y = 0$

Next Question

5. Let $U = (u_{ij})$ and $V = (v_{ij})$ be 3×4 matrices defined by

$$u_{ij} = i - j + 1 \quad \text{and} \quad v_{ij} = ij - 5.$$

Then the $(2, 1)$ -entry of $U^T V$ is

- A -7
- B -3
- C 0
- D 3
- E 7

No more questions



RIGHT!

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Wrong...try again

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