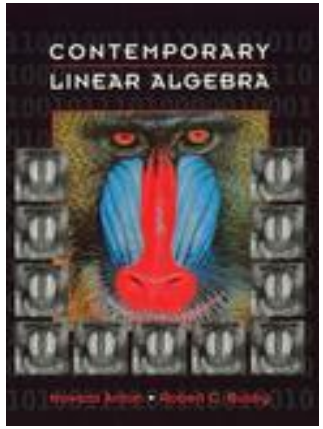
Chapter 4 , Section 3 of *Contemporary Linear Algebra* by Anton and Busby



Next Page

1. Find the volume of the parallelepiped determined by $(1, -1, 3)$, $(4, 1, 5)$, and $(1, 0, -6)$.

- A -38
- B -4
- C 0
- D 4
- E 38

Next Question

2. Suppose A and $\text{adj}(A)$ are given, but some entries are illegible.

$$A = \begin{pmatrix} 2 & 3 & 6 & * \\ & * & -2 & 3 \\ 4 & 1 & 2 & 0 \\ -6 & 3 & 1 & * \end{pmatrix} \quad \text{and} \quad \text{adj}(A) = \begin{pmatrix} 15 & -15 & 27 & * \\ -48 & * & * & 30 \\ 54 & 54 & -81 & -27 \\ 41 & 50 & * & * \end{pmatrix}$$

What is the determinant of A? (Can you find all the missing entries?)

- A -81
- B 54
- C 0
- D 27
- E 81

Next Question

3. If a, d, and f are all non-zero and

$$\begin{pmatrix} a & b & c \\ 0 & d & e \\ 0 & 0 & f \end{pmatrix} \begin{pmatrix} x \\ y \\ z \end{pmatrix} = \begin{pmatrix} g \\ h \\ i \end{pmatrix}$$

then

- A $y = 0$
- B $y = \dfrac{hf - ie}{df}$
- C $y = \dfrac{h}{d}$
- D $y = \dfrac{ghi}{adf}$
- E $y = h$

Next Question

4. Simplify $\mathbf{u} \cdot ((\mathbf{u} + \mathbf{w}) \times (\mathbf{u} - \mathbf{v}))$.

- A $\mathbf{v} \times \mathbf{w}$
- B $\mathbf{u} \cdot (\mathbf{v} \times \mathbf{w})$
- C $\mathbf{u} \cdot (\mathbf{v} - \mathbf{w})$
- D $\|\mathbf{u}\|^2$,
- E $-\mathbf{v} \times \mathbf{w}$

Next Question

5. Let a be a number between 0 and 6 and let (x, y, z) be a solution to the system

$$\begin{aligned} 2x + ay + 3z &= -1 \\ 2x \qquad + 4z &= 1 \\ 3x - 5y + 6z &= 0 \end{aligned}$$

What value of a makes x as small as possible?

- A 0
- B 6/35
- C 1
- D 35/6
- E 6

No more questions

RIGHT!

Back

Wrong...try again

Back