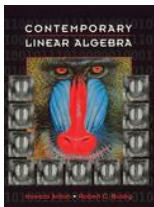


Chapter 7 , Section 1 of *Contemporary Linear Algebra* by Anton and Busby



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1. Which one of the following sets is not a basis for the plane defined by the parametric equations

$$x = s + t, y = s - t, z = 3s + 2t, s, t \in \mathbf{R}?$$

- ▶ A  $\{(1, 1, 3), (1, -1, 2)\}$
- ▶ B  $\{(1, 3, 4), (5, -3, 11)\}$
- ▶ C  $\{(1, -3, 1), (0, 2, 1)\}$
- ▶ D  $\{(-1, 5, 0), (3, 1, 8)\}$
- ▶ E  $\{(3, -5, -5), (2, 4, 7)\}$

Next Question

3. Which of the following is a basis for the hyperplane  $(0, -3, 5, 7)^\perp$ ?

- ▶ A  $\{(1, 1, 0, 0), (0, \frac{5}{3}, 1, 0), (0, \frac{7}{3}, 0, 1)\}$
- ▶ B  $\{(1, 0, 0, 0), (1, \frac{5}{3}, 1, 1), (0, \frac{7}{3}, 0, 1)\}$
- ▶ C  $\{(1, 0, 0, 0), (0, \frac{5}{3}, 1, 0), (1, \frac{7}{3}, 1, 1)\}$
- ▶ D  $\{(1, 0, 0, 0), (0, \frac{5}{3}, 1, 0), (0, \frac{7}{3}, 0, 1)\}$
- ▶ E  $\{(1, 0, 0, 0), (1, \frac{5}{3}, 1, 0), (0, \frac{7}{3}, 1, 1)\}$

Next Question

4. The vectors  $(1, 3, 0, 2)$ ,  $(0, -1, 2, 2)$ , and  $(-1, 2, 2, 0)$  form a basis for the hyperplane  $(x_1, x_2, x_3, x_4)^\perp$ . Given that  $x_4 = 5$ , find  $x_1$ .

- ▶ A -10
- ▶ B -5
- ▶ C 2
- ▶ D 5
- ▶ E 10

Next Question

5. Let  $W$  be a subspace of  $\mathbf{R}^m$  and let  $\mathbf{w}_1, \mathbf{w}_2, \dots, \mathbf{w}_n$  be vectors in  $W$ . Let  $P$ ,  $Q$  and  $R$  be the following statements:

$P$  :  $\{\mathbf{w}_1, \mathbf{w}_2, \dots, \mathbf{w}_n\}$  span  $W$

$Q$  :  $\dim(W) \leq n$

$R$  :  $\{\mathbf{w}_1, \mathbf{w}_2, \dots, \mathbf{w}_n\}$  are linearly independent.

Find the true statement.

- A If  $Q$  then  $P$
- B If  $P$  then  $Q$
- C If  $R$  then  $P$
- D If  $R$  then  $Q$
- E If  $P$  then  $R$

No more questions



RIGHT!

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Wrong...try again

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