

Note: Some questions have more than one answer

1. By solving the following system for x and y using any method: $2x - y = 2$ and $4x - 2y = 1$. The system is:
 [A] Consistent, dependent [B] Inconsistent, dependent [C] Inconsistent with no solution
 [D] No solution [E] Consistent, independent [F] Inconsistent, independent
 [G] Dependent with infinite number of solutions

2. By solving the following system for x and y using any method: $2x - y = 2$ and $4x - 2y = 4$. The system is:
 [A] Consistent, dependent [B] Inconsistent, dependent [C] Inconsistent with no solution
 [D] No solution [E] Consistent, independent [F] Inconsistent, independent
 [G] Dependent with infinite number of solutions $y = 2x - 2$, $x = any$

3. By solving the following system for x and y using any method: $x - y = 2$ and $x + y = 6$. The system is:
 [A] Consistent, dependent [B] Inconsistent, dependent [C] Inconsistent with no solution
 [D] No solution [E] Consistent, independent [F] Inconsistent, independent
 [G] Has two solution [H] Has one solution [I] Has infinite # of solutions
 $x = 4, y = 2$

4. By solving any system of three linear equations with three unknowns. There are:
 [A] only 3 solutions [B] 1 or 2 or 3 solutions [C] only 1 solution
 [D] No solution [E] infinite number of solutions
 [F] All of the above except A, B [G] None of the above *you can choose F only*

5. If A is a 2×2 matrix, B is a 3×2 matrix, C is a 3×1 matrix, D is a 1×3 matrix and E is 2×3 matrix. Which of the following multiplication is possible, and if it is, what is the dimension of the resulting matrix?

- a) AB Yes ; No . The product is a : x matrix
 b) BA Yes ; No . The product is a : 3×2 matrix
 c) AE Yes ; No . The product is a : 2×3 matrix
 d) DC Yes ; No . The product is a : 1×1 matrix
 e) CD Yes ; No . The product is a : 3×3 matrix
 f) BC Yes ; No . The product is a : x matrix
 g) BE Yes ; No . The product is a : 3×3 matrix
 h) EB Yes ; No . The product is a : 2×2 matrix

6. Using the following matrices: $A = \begin{bmatrix} 2 & 3 & -1 \\ 2 & 4 & 2 \end{bmatrix}$; $B = \begin{bmatrix} 2 & 3 & 1 \\ 0 & 1 & 2 \\ -5 & 1 & 2 \end{bmatrix}$ and, $C = \begin{bmatrix} 2 & 4 \\ 3 & 1 \\ -2 & 0 \end{bmatrix}$

- a) Find, if possible, the entry in the second row and first column of $A \cdot B$ -6
 b) Find, if possible, the entry in the second row and second column of $C \cdot A$ 13
 c) Find, if possible, the entry in the first row and second column of $B \cdot A$ N.P.

7. If $A = \begin{bmatrix} 2 & 4 & 0 \\ -1 & -2 & 5 \end{bmatrix}$ and $B = \begin{bmatrix} 3 & 1 & -2 \\ 4 & 0 & -2 \end{bmatrix}$, find $2A - 2B = \begin{bmatrix} -2 & 6 & 4 \\ -10 & -4 & 14 \end{bmatrix}$