

True or False?

Introduction to Matrices

$$\mathbf{A} = \begin{pmatrix} 5 & -2 \\ 1 & 3 \end{pmatrix} \quad \mathbf{B} = \begin{pmatrix} -1 & 0 \\ 4 & 7 \end{pmatrix} \quad \mathbf{C} = \begin{pmatrix} 2 \\ 3 \end{pmatrix} \quad \mathbf{D} = \begin{pmatrix} -1 \\ 8 \end{pmatrix} \quad \mathbf{E} = \begin{pmatrix} -2 & 4 \\ 2 & 0 \end{pmatrix} \quad \mathbf{F} = (3 \quad -2)$$

For each statement, circle the correct response.
Where a statement is false, correct it to make it true.

1	The order of matrix C is 1×2	True	False
2	$\mathbf{A} + 2\mathbf{E} = \begin{pmatrix} 1 & 6 \\ 5 & 3 \end{pmatrix}$	True	False
3	$\mathbf{B} + \mathbf{D} = -2 \begin{pmatrix} 1 & 0 \\ -6 & -3.5 \end{pmatrix}$	True	False
4	$\mathbf{C} - \begin{pmatrix} 5 \\ 1 \end{pmatrix} = \mathbf{D} + 2 \begin{pmatrix} -1 \\ 3 \end{pmatrix}$	True	False
5	It is not possible to find $\mathbf{A} + \mathbf{B} - \mathbf{C}$	True	False
6	$\mathbf{E} - \mathbf{A} = \begin{pmatrix} -7 & 2 \\ 1 & -3 \end{pmatrix}$	True	False
7	$2\mathbf{C} - \begin{pmatrix} 2 \\ 5 \end{pmatrix} = \begin{pmatrix} -1 \\ 25 \end{pmatrix} - 3\mathbf{D}$	True	False
8	An identity matrix must also be a square matrix	True	False
9	If $\mathbf{C} + \begin{pmatrix} x \\ y \end{pmatrix} = 2\mathbf{D}$ then $x = -4$ and $y = -13$	True	False
10	$2\mathbf{B} + 3\mathbf{I}_2 = \begin{pmatrix} 1 & 0 \\ 8 & 42 \end{pmatrix}$	True	False
11	$\frac{5}{2}\mathbf{I}_2 - \mathbf{A} - \frac{1}{2}\mathbf{B} = \begin{pmatrix} -2 & 2 \\ -3 & -4 \end{pmatrix}$	True	False
12	If $\mathbf{E} - k\mathbf{B} = \begin{pmatrix} 1 & 4 \\ -10 & -21 \end{pmatrix}$ then $k = -3$	True	False