

5/5 points (100%)

✓ Congratulations! You passed!

Next Item



Let two matrices be

$$A = \begin{bmatrix} 4 & 3 \\ 6 & 9 \end{bmatrix}, \qquad B = \begin{bmatrix} -2 & 9 \\ -5 & 2 \end{bmatrix}$$

$$B = \begin{bmatrix} -2 & 9 \\ -5 & 2 \end{bmatrix}$$

What is A - B?

$$\begin{bmatrix}
4 & 12 \\
1 & 11
\end{bmatrix}$$

$$\begin{bmatrix} 2 & -6 \\ 1 & 7 \end{bmatrix}$$

$$\begin{bmatrix} 6 & -12 \\ 11 & 11 \end{bmatrix}$$

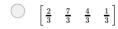
$$\begin{bmatrix} 6 & -6 \\ 11 & 7 \end{bmatrix}$$

To subtract B from A, carry out the subtraction element-wise.



Let
$$x = \begin{bmatrix} 2 \\ 7 \\ 4 \\ 1 \end{bmatrix}$$

What is 3 * x?





To multiply the vector x by 3, take each element of x and multiply that element by 3.

- [6 21 12 3]



5/5 points (100%)



1/1 points

Let u be a 3-dimensional vector, where specifically

$$u = \begin{bmatrix} 3 \\ 5 \\ 1 \end{bmatrix}$$

What is u^{T} ?





 $[3 \ 5 \ 1]$

Correct







1/1 points

Let u and v be 3-dimensional vectors, where specifically

$$u = \begin{bmatrix} -3 \\ 4 \\ 3 \end{bmatrix}$$

and

$$v = \begin{bmatrix} 3 \\ 1 \\ 5 \end{bmatrix}$$

What is $u^T v$?

(Hint: \boldsymbol{u}^T is a

1x3 dimensional matrix, and v can also be seen as a 3x1

matrix. The answer you want can be obtained by taking

4. the matrix product of \boldsymbol{u}^T and \boldsymbol{v} .) Do not add brackets to your answer.

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Correct Response

Linear Algebra

Practice Quiz, 5 questions 1 / 1

5/5 points (100%)



Let A and B be 3x3 (square) matrices. Which of the following

must necessarily hold true? Check all that apply.



If C = A * B, then C is a 6x6 matrix.

Un-selected is correct

points



$$A+B=B+A$$

Correct

We add matrices element-wise. So, this must be true.



$$A*B*A=B*A*B$$

Un-selected is correct



If v is a 3 dimensional vector, then A*B*v is a 3 dimensional vector.

Correct

Since A and B are both 3x3 matrices, A*B is 3x3 matrix. Thus, (A*B)*v is a 3x3 matrix times a 3×1 matrix (since v is a 3 dimensional vector, and thus also a 3x1 matrix), and the result gives a 3x1 vector.





