Linear Algebra

Practice Quiz, 5 questions



Congratulations! You passed!

Next Item



1/1 points

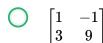
Let two matrices be

$$A = egin{bmatrix} 1 & -4 \ -2 & 1 \end{bmatrix}, \qquad B = egin{bmatrix} 0 & 3 \ 5 & 8 \end{bmatrix}$$

$$B = \begin{bmatrix} 0 & 3 \\ 5 & 8 \end{bmatrix}$$

What is A + B?

$$\begin{bmatrix} 1 & -1 \\ 7 & 9 \end{bmatrix}$$





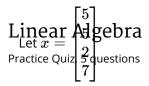
To add two matrices, add them element-wise.





1/1 points

2.

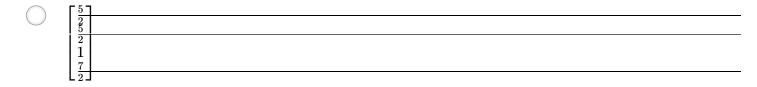


What is 2 * x?

 $\begin{bmatrix} 10\\10\\4\\14 \end{bmatrix}$

Correct

To multiply the vector x by 2, take each element of x and multiply that element by 2.





3.

1/1 points

Let u be a 3-dimensional vector, where specifically

$$u = egin{bmatrix} 5 \ 1 \ 9 \end{bmatrix}$$

What is u^{T} ?

 $\bigcirc \quad [9 \quad 1 \quad 5]$

 $\begin{bmatrix} 9 \\ 1 \\ 5 \end{bmatrix}$

 $\begin{bmatrix} 5 \\ 1 \\ 9 \end{bmatrix}$

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1/1 points

4

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

$$u = egin{bmatrix} 1 \ 3 \ -1 \end{bmatrix}$$

and

$$v = egin{bmatrix} 2 \ 2 \ 4 \end{bmatrix}$$

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

the matrix product of u^T and v.) Do not add brackets to your answer.

4

Correct Response



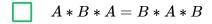
1/1 points

5.

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

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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.

A + B = B + A

Correct

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

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

Un-selected is correct

