Linear Algebra

Practice Quiz, 5 questions

Congratulations! You passed!

Next Item

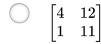


Let two matrices be

$$A = egin{bmatrix} 4 & 3 \ 6 & 9 \end{bmatrix}$$

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

What is A - B?





Correct

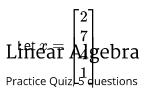
To subtract B from A, carry out the subtraction element-wise.

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

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



2.



What is 3 * x?

 $\begin{bmatrix}
\frac{2}{3} \\
\frac{3}{4} \\
\frac{3}{4}
\end{bmatrix}$

 $\begin{bmatrix}
6 \\
21 \\
12 \\
3
\end{bmatrix}$

Correct

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



1/1 points

3.

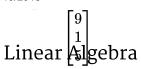
Let u be a 3-dimensional vector, where specifically

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

What is u^{T} ?

Correct

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



Practice Quiz, 5 questions



1/1 points

4

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

$$u = egin{bmatrix} 3 \ -5 \ 4 \end{bmatrix}$$

and

$$v = egin{bmatrix} 1 \ 2 \ 5 \end{bmatrix}$$

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

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

13

Correct Response



1/1 points

5.

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

Lineale & Golffad true? Check all that apply.

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lacksquare If A is the 3x3 identity matrix, then A*B=B*A

Correct

Even though matrix multiplication is not commutative in general ($A*B \neq B*A$ for general matrices A,B), for the special case where A=I, we have A*B=I*B=B, and also B*A=B*I=B. So, A*B=B*A.

Correct

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

Un-selected is correct

Un-selected is correct

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