



Congratulations! You passed!

Next Item



1. Let two matrices be

1 / 1
point

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

What is $A - B$?

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

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

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

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



Correct

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



2.

1 / 1
point

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

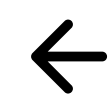
What is $\frac{1}{2} * x$?

☒ $\begin{bmatrix} 1 \\ \frac{7}{2} \\ 2 \\ \frac{1}{2} \end{bmatrix}$



Correct

To multiply the vector x by $\frac{1}{2}$, take each element of x and multiply that element by $\frac{1}{2}$.

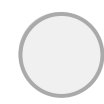


Linear Algebra

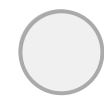
Practice Quiz, 5 questions



$$\begin{bmatrix} 4 \\ 14 \\ 8 \\ 2 \end{bmatrix}$$



$$\begin{bmatrix} 1 & \frac{7}{2} & 2 & \frac{1}{2} \end{bmatrix}$$



$$\begin{bmatrix} 4 & 14 & 8 & 2 \end{bmatrix}$$

5/5 points (100%)



3. Let u be a 3-dimensional vector, where specifically

1 / 1
point

$$u = \begin{bmatrix} 8 \\ 1 \\ 4 \end{bmatrix}$$

What is u^T ?



$$\begin{bmatrix} 4 & 1 & 8 \end{bmatrix}$$



$$\begin{bmatrix} 8 & 1 & 4 \end{bmatrix}$$



Correct



$$\begin{bmatrix} 4 \\ 1 \\ 8 \end{bmatrix}$$



$$\begin{bmatrix} 8 \\ 1 \\ 4 \end{bmatrix}$$



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

1 / 1
point

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

and

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

What is $u^T v$?

(Hint: u^T is a



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Practice Quiz, 5 questions

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

5/5 points (100%)

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



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

must necessarily hold true? Check all that apply.

1 / 1
point



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

Un-selected is correct



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, $A * B = B * A$.



$A * B = B * A$

Un-selected is correct



$A + B = B + A$

Correct

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



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Practice Quiz, 5 questions

5/5 points (100%)

