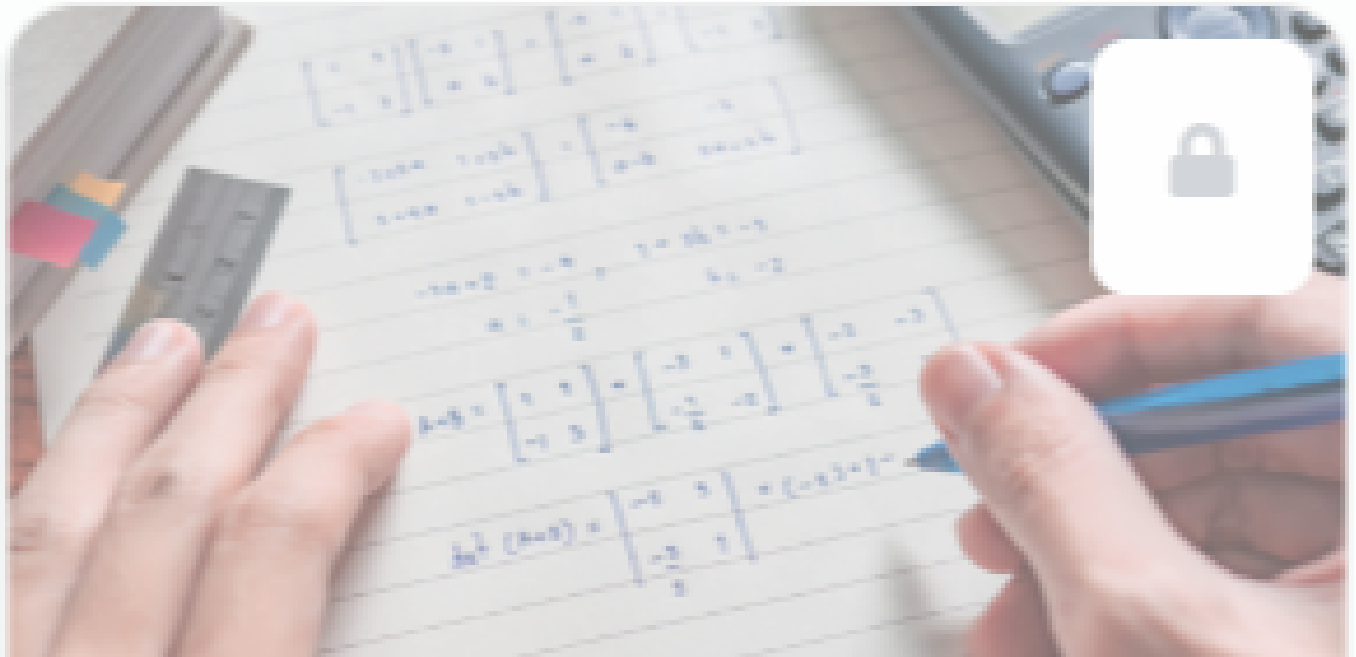




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Linear Systems and Matrices

13. Multiplying Square Matrices

 Lesson

Locked by Teacher

QUESTION 1



Given that

$$A = \begin{bmatrix} 1.5 & -6.2 \\ 8.3 & 0.4 \end{bmatrix}$$

and

$$B = \begin{bmatrix} -4 & 0.5 \\ 3.2 & 4.8 \end{bmatrix}$$

, find AB .

Drag and drop the correct answer into the box.

$$AB = \begin{bmatrix} -25.84 & -29.01 \\ -31.92 & 6.07 \end{bmatrix} \checkmark$$

$$\begin{bmatrix} 13.84 & 30.51 \\ -34.48 & 2.23 \end{bmatrix}$$

$$\begin{bmatrix} -6 & -3.1 \\ 26.56 & 1.92 \end{bmatrix}$$

$$\begin{bmatrix} -2.5 & -5.7 \\ 11.5 & 5.2 \end{bmatrix}$$

QUESTION 2



Multiply the matrices.

Drag and drop the correct answer into the box.

$$\begin{bmatrix} 1.5 & 8 \\ -4 & 5.5 \end{bmatrix} \cdot \begin{bmatrix} 2 & -3.2 \\ 0.5 & -3 \end{bmatrix} =$$

$$\begin{bmatrix} 7 & -28.8 \\ -5.25 & -3.7 \end{bmatrix} \checkmark$$

$$\begin{bmatrix} 3.5 & 4.8 \\ -3.5 & 2.5 \end{bmatrix}$$

$$\begin{bmatrix} -1 & 19.2 \\ -10.75 & 29.3 \end{bmatrix}$$

$$\begin{bmatrix} 3 & -25.6 \\ -2 & -16.5 \end{bmatrix}$$

QUESTION 3



Given that

$$A = \begin{bmatrix} -3 & 7 \\ 10 & -1 \end{bmatrix}$$

and

$$B = \begin{bmatrix} -1 & 0 \\ -3 & 5 \end{bmatrix}$$

, find AB .

Drag and drop the correct matrix into the box.

$AB =$

$$\begin{bmatrix} -18 & 35 \\ -7 & -5 \end{bmatrix} \checkmark$$

$$\begin{bmatrix} -4 & 7 \\ 7 & 4 \end{bmatrix}$$

$$\begin{bmatrix} 3 & 0 \\ -30 & -5 \end{bmatrix}$$

$$\begin{bmatrix} 3 & 44 \\ -10 & -35 \end{bmatrix}$$

QUESTION 4



Complete the matrix multiplication.

Drag and drop the correct matrix into the box.

$$\begin{bmatrix} 7 & 2 \\ 4 & -1 \end{bmatrix} \cdot \begin{bmatrix} 2 & -3 \\ 5 & 2 \end{bmatrix} =$$

$$\begin{bmatrix} 24 & -17 \\ 3 & -14 \end{bmatrix}$$



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

$$\begin{bmatrix} 14 & -6 \\ 20 & -2 \end{bmatrix}$$

$$\begin{bmatrix} 8 & 39 \\ 11 & 18 \end{bmatrix}$$

QUESTION 5



Multiply the matrices.

Drag and drop the correct matrix into the box.

$$\begin{bmatrix} -4 & 2 \\ 5 & 1 \end{bmatrix} \cdot \begin{bmatrix} 3 & 0 \\ 6 & -2 \end{bmatrix} =$$

$$\begin{bmatrix} 0 & -4 \\ 21 & -2 \end{bmatrix} \quad \checkmark$$

$$\begin{bmatrix} -1 & 2 \\ 11 & -1 \end{bmatrix}$$

$$\begin{bmatrix} -12 & 0 \\ 30 & -2 \end{bmatrix}$$

$$\begin{bmatrix} -12 & -28 \\ 15 & 28 \end{bmatrix}$$

QUESTION 6



Complete the matrix multiplication.

Select your answer from the drop-down menu.

$$\begin{bmatrix} 4 & -7 \\ 3 & 0 \end{bmatrix} \cdot \begin{bmatrix} -2 & 1 \\ 5 & -2 \end{bmatrix} =$$

$$\begin{bmatrix} -43 & 18 \\ -6 & 3 \end{bmatrix} \quad \checkmark \quad \text{v}$$

QUESTION 7



Suppose

$$A_{4 \times 2}$$

and

$$B_{2 \times 3}$$

.

Select from the drop-down menu to correctly complete the sentence.

The product AB exists and

$$AB_{4 \times 3} \quad \checkmark \quad \blacktriangledown$$

QUESTION 8



Suppose

$$A_{2 \times 4}$$

and

$$B_{4 \times 1}$$

.

Select from the drop-down menu to correctly complete the sentence.

The product AB exists and

$$AB_{2 \times 1} \quad \checkmark \quad \blacktriangledown$$

QUESTION 9



Given that

$$X = \begin{bmatrix} 5 & 7 \\ -2 & 5 \end{bmatrix}$$

and

$$Y = \begin{bmatrix} -2 & 4 \\ 3 & 1 \end{bmatrix}$$

, find XY .

Select your answer from the drop-down menu.

$XY =$

$\begin{bmatrix} 11 & 27 \\ 19 & -3 \end{bmatrix}$
✓
▼

QUESTION 10



Choose the correct answer.

Suppose

$$A_{4 \times 6}$$

and

$$B_{6 \times 5}$$

. Which of the following is correct?



The product AB exists and

$$AB_{6 \times 6}$$

.



The product AB exists and

$$AB_{4 \times 5}$$

.





The product AB exists and

$$AB_{5 \times 4}$$

.



The product AB is undefined.

QUESTION 11



Choose the correct answer.

Suppose

$$A = \begin{bmatrix} -3 & \frac{3}{4} \\ \frac{1}{4} & 4 \end{bmatrix}$$

and

$$B = \begin{bmatrix} -\frac{1}{6} & \frac{1}{2} \\ 10 & -6 \end{bmatrix}$$

. Which of the following is AB ?



$$AB = \begin{bmatrix} 8 & -6 \\ 39\frac{23}{24} & -23\frac{7}{8} \end{bmatrix}$$



$$AB = \begin{bmatrix} \frac{1}{2} & \frac{3}{8} \\ \frac{5}{2} & -24 \end{bmatrix}$$

☐

$$AB = \begin{bmatrix} \frac{3}{8} & 1\frac{7}{8} \\ -31\frac{1}{2} & -16\frac{1}{2} \end{bmatrix}$$

☐

$$AB = \begin{bmatrix} 8 & -6 \\ 40\frac{1}{24} & -24\frac{1}{8} \end{bmatrix}$$

QUESTION 12



Choose the correct answer.

Multiply the matrices.

$$\begin{bmatrix} 2 & \frac{1}{3} \\ 9 & -6 \end{bmatrix} \cdot \begin{bmatrix} -3 & 12 \\ -\frac{2}{3} & 1 \end{bmatrix}$$

☐

$$\begin{bmatrix} -5\frac{7}{9} & 23\frac{2}{3} \\ -31 & 114 \end{bmatrix}$$

☐

$$\begin{bmatrix} -6 & 4 \\ -6 & -6 \end{bmatrix}$$



$$\begin{bmatrix} -2 & -1 \\ -99 & -12 \end{bmatrix}$$



$$\begin{bmatrix} -6\frac{2}{9} & 24\frac{1}{3} \\ -23 & 102 \end{bmatrix}$$



QUESTION 13



Choose the correct answer.

Given that

$$X = \begin{bmatrix} \frac{1}{10} & -2 \\ -\frac{1}{5} & 3 \end{bmatrix}$$

and

$$Y = \begin{bmatrix} 5 & -4 \\ 2 & -1 \end{bmatrix}$$

, find XY .



$$\begin{bmatrix} -3\frac{1}{2} & 1\frac{3}{5} \\ 5 & -2\frac{1}{5} \end{bmatrix}$$



$$\begin{bmatrix} 4\frac{1}{2} & -2\frac{2}{5} \end{bmatrix}$$

☐
$$\begin{bmatrix} -7 & 3\frac{4}{5} \end{bmatrix}$$

☐
$$\begin{bmatrix} 8\frac{1}{2} & 2\frac{1}{5} \\ -13 & -3\frac{2}{5} \end{bmatrix}$$

☐
$$\begin{bmatrix} \frac{1}{2} & 8 \\ -\frac{2}{5} & -3 \end{bmatrix}$$

QUESTION 14



Choose the correct answer.

Suppose

$$A_{2 \times 5}$$

and

$$B_{3 \times 2}$$

. Which statement is true?

☒ The product AB is undefined.



☐ The product AB exists and

$$AB_{5 \times 3}$$

☐ .

☐ The product AB exists and
 $AB_{3 \times 5}$
.

☐ The product AB exists and
 $AB_{2 \times 2}$
.

QUESTION 15



Choose the correct answer.

Suppose

$$A_{2 \times 3}$$

and

$$B_{3 \times 5}$$

. Which statement describes AB ?

☐ The product AB is undefined.

☒ The product AB exists and
 $AB_{2 \times 5}$
.



☐ The product AB exists and
 $AB_{3 \times 3}$
.



The product AB exists and

$$AB_{5 \times 2}$$

.