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INDEPENDENCE SCHOOL DISTRICT

Math Virtual Learning

College Algebra

May 14, 2020

College Algebra
Lesson: May 14, 2020

Objective/Learning Target: Students will subtract matrices.

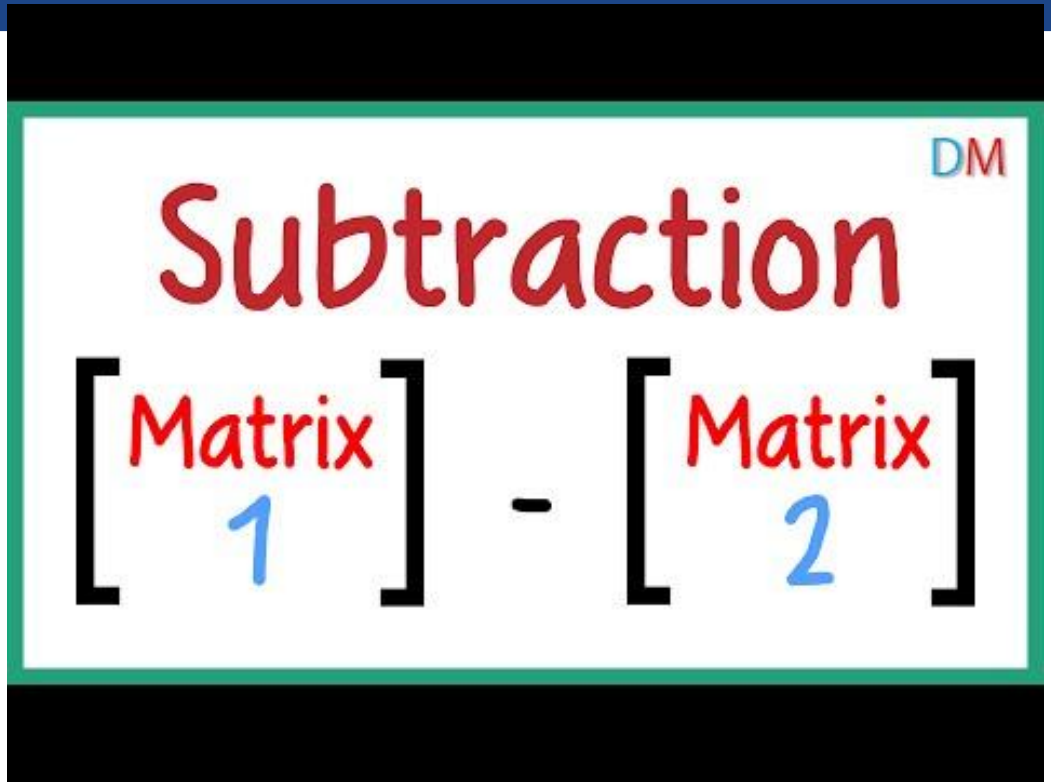
Warm Up Activity:

Work through these matrix basics problems.

Matrix Basics

Lesson:

Watch this video on how to subtract matrices. We encourage you to have your own sheet of paper out and work along with the video.



Practice:

1. Find the less of A and B where $A = \begin{bmatrix} 2 & 3 \\ -5 & 7 \end{bmatrix}$ and $B = \begin{bmatrix} 4 & 6 \\ 2 & -11 \end{bmatrix}$

2. Find A - B when $A = \begin{bmatrix} 2 & 3 & 4 \\ 5 & 6 & 7 \\ 8 & 5 & 11 \end{bmatrix}$ and $B = \begin{bmatrix} 3 & -2 & -3 \\ 5 & 4 & 3 \\ 1 & 3 & 2 \end{bmatrix}$

Practice:

3. If $A = \begin{bmatrix} -1 & 2 & -3 \\ -2 & 1 & 4 \end{bmatrix}$ and $B = \begin{bmatrix} 0 & -1 & 2 \\ 3 & 0 & 1 \end{bmatrix}$, then find the less of A and B.

4. If $\begin{bmatrix} 2 & 3 \\ -5 & 4 \end{bmatrix} - \begin{bmatrix} -2 & 1 \\ x & 3 \end{bmatrix} = \begin{bmatrix} 4 & 2 \\ -3 & 1 \end{bmatrix}$, find the value of x.

Practice:

5. Given $A = \begin{bmatrix} 1 & 4 \\ 2 & 3 \end{bmatrix}$ and $B = \begin{bmatrix} -4 & -1 \\ -3 & -2 \end{bmatrix}$, compute A - B.

6. If $\begin{bmatrix} 5 & -3 \\ 2 & 4 \end{bmatrix} - A = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$, find the matrix A.

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Practice:

7. Given $M = \begin{bmatrix} 1 & 3 \\ 2 & 4 \end{bmatrix}$, find a matrix N such that $M - N = \begin{bmatrix} 0 & 0 \\ 0 & 0 \end{bmatrix}$.

8. If $A = \begin{bmatrix} 1 & 0 & 2 \\ 0 & 2 & 3 \\ 1 & 0 & 0 \end{bmatrix}$, $B = \begin{bmatrix} 0 & -1 & 0 \\ -2 & 0 & 3 \\ 0 & 1 & 2 \end{bmatrix}$ and $C = \begin{bmatrix} 2 & 3 & 1 \\ 0 & 0 & -3 \\ 1 & 1 & -1 \end{bmatrix}$, find A - B - C.

Practice: ANSWERS

1. $\begin{bmatrix} -2 & -3 \\ -7 & 18 \end{bmatrix}$

2. $\begin{bmatrix} -1 & 5 & 7 \\ 0 & 2 & 4 \\ 7 & 2 & 9 \end{bmatrix}$

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

4. $x = -2$

5. $\begin{bmatrix} 5 & 5 \\ 5 & 5 \end{bmatrix}$

6. $\begin{bmatrix} 4 & -3 \\ 2 & 3 \end{bmatrix}$

7. $\begin{bmatrix} 1 & 3 \\ 2 & 4 \end{bmatrix}$

8. $\begin{bmatrix} -1 & -2 & 1 \\ 2 & 2 & 3 \\ 0 & -2 & -3 \end{bmatrix}$

Additional Practice:

Add the Matrices or write "undefined" for those that are undefined

1) $\begin{bmatrix} 5 \\ -1 \\ 6 \\ -6 \end{bmatrix} - \begin{bmatrix} -1 \\ -5 \\ -2 \\ -3 \end{bmatrix}$

2) $\begin{bmatrix} 2 & 4 & -1 & -2 \\ -1 & -3 & -6 & -2 \end{bmatrix} - \begin{bmatrix} 0 & 3 & -6 & 0 \\ 3 & -1 & 2 & -3 \end{bmatrix}$

3) $\begin{bmatrix} 3 & -3 & 4 & 0 \end{bmatrix} - \begin{bmatrix} -4 & 2 & -3 & 4 \end{bmatrix}$

4) $\begin{bmatrix} 5 & 5 & -2 & 2 \\ -1 & 6 & 5 & -6 \end{bmatrix} - \begin{bmatrix} -3 & 5 \\ 4 & 1 \\ 1 & -1 \\ 4 & -4 \end{bmatrix}$

Additional Practice Answers:

1) $\begin{bmatrix} 6 \\ 4 \\ 8 \\ -3 \end{bmatrix}$

2) $\begin{bmatrix} 2 & 1 & 5 & -2 \\ -4 & -2 & -8 & 1 \end{bmatrix}$

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

4) Undefined