12.2.notebook May 02, 2017

Algebra 2
Section 12-2
Matrix Multiplication

Goal: to multiply matrices using scalar and matrix multiplication.

scalar multiplication: multiplying a every element in a matrix by a real number $A = \begin{bmatrix} 2 & 5 \\ -3 & 6 \\ -1 & 0 \end{bmatrix}$ Find -3A

$$A = \begin{bmatrix} 2 & 8 & -3 \\ -1 & 5 & 2 \end{bmatrix} \text{ and } B = \begin{bmatrix} -1 & 0 & 5 \\ 0 & 3 & -2 \end{bmatrix}$$
Find 3Ao 2B
$$\begin{bmatrix} 6 & 24 & -9 \\ -3 & 15 & 6 \end{bmatrix} - \begin{bmatrix} -2 & 0 & 10 \\ 0 & 6 & -4 \end{bmatrix}$$

$$\begin{bmatrix} 8 & 24 & -19 \\ -3 & 9 & 10 \end{bmatrix}$$

Solve:
$$3X - 2\begin{bmatrix} -1 & 5 \\ 7 & 0 \end{bmatrix} = \begin{bmatrix} 17 & -13 \\ -7 & 0 \end{bmatrix}$$

$$3X - 2\begin{bmatrix} 10 \\ 14 \end{bmatrix} = \begin{bmatrix} 17 & -13 \\ -7 & 0 \end{bmatrix} + \begin{bmatrix} 210 \\ 140 \end{bmatrix}$$

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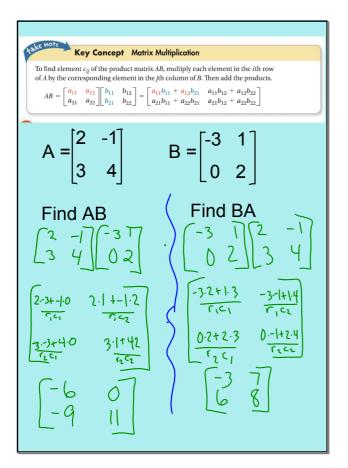
$$3X - 2\begin{bmatrix} 10 \\ 14 \end{bmatrix} = \begin{bmatrix} 17 & -13 \\ -7 & 0 \end{bmatrix} + \begin{bmatrix} 210 \\ 140 \end{bmatrix}$$

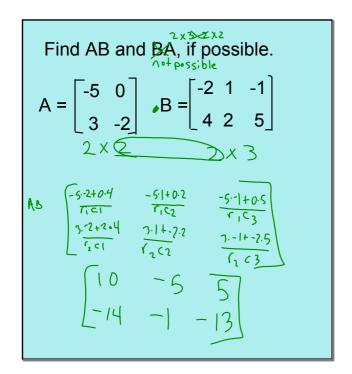
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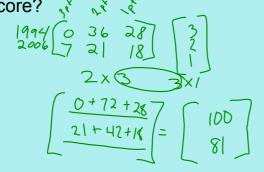




#27.
$$\begin{bmatrix} -1 & 3 & -3 \\ 2 & -2 & 1 \end{bmatrix} \cdot \begin{bmatrix} 5 \\ 4 \\ 3 \end{bmatrix} = \begin{bmatrix} -\frac{5}{4} \\ \frac{10+8+3}{5} \\ \frac{7}{2} - 1 \end{bmatrix} = \begin{bmatrix} -\frac{7}{2} \\ \frac{5}{3} \\ \frac{1}{2} \end{bmatrix}$$

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In 1994, suppose a high school player scored 36 two-point field goals and 28 free throws. In 2006, suppose a high school player scored 7 three-point field goals, 21 two-point field goals, and 18 free throws. Using matrix multiplication, how many points did each player score?



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