Name _____ Date _____ Class _____

LESSON 4-2

Practice A

Multiplying Matrices

Tell whether each product is defined. If so, give its dimensions. The first one is done for you.

1. $A_{3\times 4}$ and $B_{4\times 6}$; AB

yes; 3×6

2. $C_{4\times 2}$ and $D_{2\times 1}$; CD

_____

3. $E_{5\times 2}$ and $F_{5\times 3}$; EF

_____

Use the following matrices for Exercises 4–6. Evaluate, if possible.

$$A=\begin{bmatrix}2 & 0\\ 1 & 3\end{bmatrix} \qquad B=\begin{bmatrix}0 & 5\\ 2 & 1\\ 0 & 3\\ 1 & 0\end{bmatrix} \qquad C=\begin{bmatrix}8 & 1 & 0 & 1\\ 0 & 2 & 3 & 1\end{bmatrix}$$

4. $A^2 = A\times A = \begin{bmatrix}2 & 0\\ 1 & 3\end{bmatrix}\times\begin{bmatrix}2 & 0\\ 1 & 3\end{bmatrix}$

$$=\begin{bmatrix}2(2)+0(1) & 2(\_\_\_\_)+0(\_\_\_\_)\\ 1(\_\_\_\_)+3(\_\_\_\_) & 1(\_\_\_\_)+3(\_\_\_\_)\end{bmatrix}$$

_____

5. CB

_____

6. BA

_____

Solve.

7. Julie and Steve played the games at the arcade. Table A shows the number of each type of ticket they won. Table B shows the point value of each ticket. Find the total number of points they each won.

A	Tickets Won		
Player	**Red**	**Yellow**	**Blue**
Julie	15	6	2
Steve	17	3	4

B Ticket Point Values	
Ticket	**Points**
Red	5
Yellow	10
Blue	25

a. Write a matrix that represents the data in each table.

$A=\begin{bmatrix}\quad & \quad & \quad\end{bmatrix}$ $B=\begin{bmatrix}\quad\\ \quad\\ \quad\end{bmatrix}$

_____

b. Find the product matrix.

$AB=\begin{bmatrix}\quad\\ \quad\end{bmatrix}$

_____

c. How many points did each player win?

_____

Name _____ Date _____ Class _____

LESSON 4-2

Practice A

Multiplying Matrices

Tell whether each product is defined. If so, give its dimensions. The first one is done for you.

1. $A_{3\times4}$ and $B_{4\times6}$; AB

yes; 3×6

2. $C_{4\times2}$ and $D_{2\times1}$; CD

4×1

3. $E_{5\times2}$ and $F_{5\times3}$; EF

No

Use the following matrices for Exercises 4–6. Evaluate, if possible.

$$A=\begin{bmatrix}2&0\\1&3\end{bmatrix} \qquad B=\begin{bmatrix}0&5\\2&1\\0&3\\1&0\end{bmatrix} \qquad C=\begin{bmatrix}8&1&0&1\\0&2&3&1\end{bmatrix}$$

4. $A^2 = A\times A = \begin{bmatrix}2&0\\1&3\end{bmatrix}\times\begin{bmatrix}2&0\\1&3\end{bmatrix}$

$$=\begin{bmatrix}2(2)+0(1) & 2(\underline{0})+0(\underline{3})\\ 1(\underline{2})+3(\underline{1}) & 1(\underline{0})+3(\underline{3})\end{bmatrix}$$

$\begin{bmatrix}4&0\\5&9\end{bmatrix}$

5. CB

$\begin{bmatrix}3&41\\5&11\end{bmatrix}$

6. BA

$\begin{bmatrix}5&15\\5&3\\3&9\\2&0\end{bmatrix}$

Solve.

7. Julie and Steve played the games at the arcade. Table A shows the number of each type of ticket they won. Table B shows the point value of each ticket. Find the total number of points they each won.

A	Tickets Won		
Player	**Red**	**Yellow**	**Blue**
Julie	15	6	2
Steve	17	3	4

B Ticket Point Values	
Ticket	**Points**
Red	5
Yellow	10
Blue	25

a. Write a matrix that represents the data in each table.

$A=\begin{bmatrix}15&6&2\\17&3&4\end{bmatrix}$, $B=\begin{bmatrix}5\\10\\25\end{bmatrix}$

b. Find the product matrix.

$AB=\begin{bmatrix}185\\215\end{bmatrix}$

c. How many points did each player win?

Julie 185, Steve 215