Name _____ Date _____ Class _____

LESSON 4-2

Practice B

Multiplying Matrices

Tell whether each product is defined. If so, give its dimensions.

1. $P_{3 \times 3}$ and $Q_{3 \times 4}$; PQ

2. $R_{3 \times 8}$ and $S_{4 \times 3}$; SR

3. $W_{2 \times 5}$ and $X_{2 \times 5}$; WX

Use the following matrices for Exercises 4–7. Evaluate, if possible.

$$E = \begin{bmatrix} -4 & 1 \\ -2 & 2 \end{bmatrix} \quad F = \begin{bmatrix} 1 & 0 \\ 4 & -3 \\ -2 & 6 \\ -1 & 5 \end{bmatrix} \quad G = \begin{bmatrix} -4 & 0 & 3 & 5 \\ 1 & -2 & 0 & 0 \end{bmatrix} \quad H = \begin{bmatrix} 1 & -2 & -1 & 3 \\ 2 & 0 & 4 & -1 \\ 3 & 5 & -2 & 2 \\ 1 & -1 & 0 & 0 \end{bmatrix}$$

4. EG

5. HF

6. FG

7. E^2

Solve.

8. Jamal, Ken, and Barry are playing a baseball video game. The first table shows the number of singles, doubles, triples, and home runs each scored. Find the total number of points they each scored.

Hits				
Player	**S**	**D**	**T**	**HR**
Jamal	3	2	0	1
Ken	2	4	0	0
Barry	0	1	3	1

Points Scored for Hits	
Hit	**Points**
Single (S)	1
Double (D)	2
Triple (T)	3
Home run (HR)	4

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

b. Find the product matrix.

c. How many points did each player score?

Name _____ Date _____ Class _____

LESSON 4-2

Practice B

Multiplying Matrices

Tell whether each product is defined. If so, give its dimensions.

1. $P_{3\times3}$ and $Q_{3\times4}$; PQ

3×4

2. $R_{3\times8}$ and $S_{4\times3}$; SR

4×8

3. $W_{2\times5}$ and $X_{2\times5}$; WX

No

Use the following matrices for Exercises 4–7. Evaluate, if possible.

$$E=\begin{bmatrix}-4 & 1\\ -2 & 2\end{bmatrix} \quad F=\begin{bmatrix}1 & 0\\ 4 & -3\\ -2 & 6\\ -1 & 5\end{bmatrix} \quad G=\begin{bmatrix}-4 & 0 & 3 & 5\\ 1 & -2 & 0 & 0\end{bmatrix} \quad H=\begin{bmatrix}1 & -2 & -1 & 3\\ 2 & 0 & 4 & -1\\ 3 & 5 & -2 & 2\\ 1 & -1 & 0 & 0\end{bmatrix}$$

4. EG

$$\begin{bmatrix}17 & -2 & -12 & -20\\ 10 & -4 & -6 & -10\end{bmatrix}$$

5. HF

$$\begin{bmatrix}-8 & 15\\ -5 & 19\\ 25 & -17\\ -3 & 3\end{bmatrix}$$

6. FG

$$\begin{bmatrix}-4 & 0 & 3 & 5\\ -19 & 6 & 12 & 20\\ 14 & -12 & -6 & -10\\ 9 & -10 & -3 & -5\end{bmatrix}$$

7. E^2

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

Solve.

8. Jamal, Ken, and Barry are playing a baseball video game. The first table shows the number of singles, doubles, triples, and home runs each scored. Find the total number of points they each scored.

Hits				
Player	**S**	**D**	**T**	**HR**
Jamal	3	2	0	1
Ken	2	4	0	0
Barry	0	1	3	1

Points Scored for Hits	
Hit	**Points**
Single (S)	1
Double (D)	2
Triple (T)	3
Home run (HR)	4

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

$$\begin{bmatrix}3 & 2 & 0 & 1\\ 2 & 4 & 0 & 0\\ 0 & 1 & 3 & 1\end{bmatrix}, \begin{bmatrix}1\\ 2\\ 3\\ 4\end{bmatrix}$$

b. Find the product matrix.

$$\begin{bmatrix}11\\ 10\\ 15\end{bmatrix}$$

c. How many points did each player score?

Jamal 11, Ken 10, Barry 15