# Transition to College Math

## Guided Practice Unit 2 Lesson 2 Multiplying Matrices

Name _____ Date _____ Period _____

1. If $A$ is a $3 \times 3$ matrix, and $B$ is a $3 \times 4$ matrix, what are the dimensions of $AB$?

In exercises 2-5, the dimensions of matrices $A$ and $B$ are given. Indicate whether or not the matrix product, $AB$, exists. If it does, give the dimensions of the product. If the product does not exist, explain why.

2. $A_{2,3}$ $B_{3,4}$

3. $A_{2,3}$ $B_{2,3}$

4. $A_{1,4}$ $B_{4,1}$

5. $A_{2,3}$ $B_{3,3}$

Find the following matrix products. If the product is undefined, explain why.

6. $\begin{bmatrix} 3 & -4 \\ -4 & 5 \end{bmatrix}\begin{bmatrix} 5 & 4 \\ 4 & 3 \end{bmatrix}$

7. $\begin{bmatrix} 9 & -5 \\ -1 & -4 \end{bmatrix}\begin{bmatrix} 8 & -9 & 3 & 9 \\ -9 & 6 & 0 & -5 \end{bmatrix}$

8. $\begin{bmatrix} 3 \\ 7 \end{bmatrix}\begin{bmatrix} -1 & -6 & 0 \\ -8 & 7 & -10 \end{bmatrix}$

9. $\begin{bmatrix} -10 & -7 & 1 \\ 8 & 9 & 3 \end{bmatrix}\begin{bmatrix} 6 & 8 & -3 \\ -7 & -6 & 7 \end{bmatrix}$

10. $\begin{bmatrix} -3 & 1 & -9 \\ 5 & 6 & -7 \end{bmatrix}\begin{bmatrix} 4 \\ -2 \\ -4 \end{bmatrix}$