

Student Name: \_\_\_\_\_

Score: \_\_\_\_\_

**Multiplication of Matrices**

Existence: S1

For each pair of matrices, find a)  $AB$  and b)  $BA$ . If a product is not possible to find, state 'not possible'.

$$A = \begin{bmatrix} 2 & 3 & 3 \\ 1 & 4 & 3 \\ 5 & -2 & 1 \end{bmatrix}, B = \begin{bmatrix} 7 & 4 & 5 \\ 6 & 2 & 2 \\ 5 & 1 & -1 \end{bmatrix}$$

 $AB =$  $BA =$ 

$$A = \begin{bmatrix} -8 & 5 & 2 & -3 \\ 1 & -1 & 6 & 7 \end{bmatrix}, B = \begin{bmatrix} 3 & 5 \\ 2 & 2 \\ 6 & 1 \\ 8 & -4 \end{bmatrix}$$

 $AB =$  $BA =$ 

$$A = \begin{bmatrix} 6 & -7 \\ 11 & 12 \end{bmatrix}, B = \begin{bmatrix} 3 & -2 \\ 5 & 4 \end{bmatrix}$$

 $AB =$  $BA =$ 

$$A = [-3 \quad 4 \quad 13 \quad 2 \quad 8], B = \begin{bmatrix} -2 & 3 \\ 1 & 4 \\ 6 & 7 \\ 4 & -1 \\ 5 & 8 \end{bmatrix}$$

 $AB =$  $BA =$

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Answer key

## Multiplication of Matrices

Existence: S1

$$AB = \begin{bmatrix} 47 & 17 & 13 \\ 46 & 15 & 10 \\ 28 & 17 & 20 \end{bmatrix} \quad BA = \begin{bmatrix} 43 & 27 & 38 \\ 24 & 22 & 26 \\ 6 & 21 & 17 \end{bmatrix}$$

$$AB = \begin{bmatrix} -26 & -16 \\ 93 & -19 \end{bmatrix} \quad BA = \begin{bmatrix} -19 & 10 & 36 & 26 \\ -14 & 8 & 16 & 8 \\ -47 & 29 & 18 & -11 \\ -68 & 44 & -8 & -52 \end{bmatrix}$$

$$AB = \begin{bmatrix} -17 & -40 \\ 93 & 26 \end{bmatrix} \quad BA = \begin{bmatrix} -4 & -45 \\ 74 & 13 \end{bmatrix}$$

$$AB = [136 \quad 160] \quad BA \text{ is 'not possible'}$$