Name _____ Date _____

Unique Properties of Matrix Operations - Guided Lesson Explanation

Explanation #1

Both matrices being added have 3 rows and 1 column, so their sum B also has 3 rows and 1 column.

$$\begin{bmatrix} 2 \\ 1 \\ 3 \end{bmatrix} + \begin{bmatrix} 0 \\ 5 \\ 0 \end{bmatrix} + \begin{bmatrix} 1 \\ 0 \\ 0 \end{bmatrix} = \begin{bmatrix} 3 \\ 6 \\ 3 \end{bmatrix}$$

The dimensions of B are 3 by 1.

Explanation #2

The first matrix has 2 rows and 2 columns

$$\begin{bmatrix} 4 & 8 \\ 6 & 3 \end{bmatrix}$$

The second matrix has 2 rows and 3 columns.

$$\begin{bmatrix} 3 & 0 & 2 \\ 7 & 1 & 5 \end{bmatrix}$$

Since the two matrices do not have the same number of columns, their difference is not defined.

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Explanation #3

Multiplying a matrix by a number does not change its dimensions, A is the difference of the matrices that have 1 row and 2 columns.

A = 3[2 2] – [4 5]

A = [6 6] - [4 5] = [2 1]

The dimensions of A are 1 by 2.