

Name: Solutions

Quiz 5

Wednesday, October 11, 2023

MATH 231

Fall 2023

Problem 1. Let $A = \begin{bmatrix} 1 & -1 \\ 2 & 0 \\ -3 & 2 \end{bmatrix}$ and $B = \begin{bmatrix} 1 & 0 & -1 & 5 \\ 0 & 7 & -2 & 1 \end{bmatrix}$. Compute AB .

$$AB = \begin{bmatrix} 1 & -7 & 1 & 4 \\ 2 & 0 & -2 & 10 \\ -3 & 14 & -1 & -13 \end{bmatrix}$$

Problem 2. If a matrix A is 5×3 and the product AB is 5×7 , what is the size of B ?

$$3 \times 7$$

Problem 3. How many rows does B have if BC is a 3×4 matrix?

$$3$$

Problem 4. Let $A = \begin{bmatrix} 2 & 5 \\ -4 & 6 \end{bmatrix}$ and $B = \begin{bmatrix} 4 & -5 \\ 3 & k \end{bmatrix}$. What value(s) of k , if any, will make $AB = BA$?

$$AB = \begin{bmatrix} 23 & \\ & \end{bmatrix}$$

$$BA = \begin{bmatrix} 28 & \\ & \end{bmatrix}$$

$23 \neq 28 \Rightarrow AB \neq BA$ for any value of k .