

4.10 Matrices

AP Precalculus

Name: _____

CA #1

Directions: Simplify the following matrices to a single matrix.

1) $\begin{bmatrix} 0 & 3 & -4 \\ 4 & -5 & 12 \end{bmatrix} + \begin{bmatrix} 2 & 1 & 6 \\ -5 & -2 & 10 \end{bmatrix}$

2) $\begin{bmatrix} 4 & -4 \\ -5 & 2 \\ 7 & 6 \end{bmatrix} - 3 \begin{bmatrix} 3 & 0 \\ 0 & 5 \\ -9 & -1 \end{bmatrix}$

Directions: Determine if the following matrices can be multiplied. If so, determine the dimensions of the multiplied matrix.

3) $(10 \times 6) \times (6 \times 1)$

4) $(4 \times 10) \times (4 \times 12)$

Directions: Multiply the following matrices. No Calculators.

5) $\begin{bmatrix} 6 & -3 \\ 0 & 0 \\ 2 & -3 \\ -4 & 6 \end{bmatrix} \cdot \begin{bmatrix} 2 & -5 \\ 0 & 7 \end{bmatrix}$

6) $\begin{bmatrix} 0 & -4 & 10 \\ -4 & 0 & 2 \\ 8 & -1 & 0 \end{bmatrix} \cdot \begin{bmatrix} -1 & 4 \\ 0 & -3 \\ -2 & 4 \end{bmatrix}$

$$7) \begin{bmatrix} 1 & 1 & 1 \\ -2 & -2 & -2 \\ 4 & 4 & 4 \end{bmatrix} \cdot [1 \ 2 \ -3]$$

$$8) \begin{bmatrix} 0 & -4 \\ -5 & 1 \\ 2 & -6 \\ -7 & 3 \end{bmatrix} \cdot \begin{bmatrix} 10 & -6 & 8 \\ -7 & 9 & -5 \end{bmatrix}$$

ANSWERS

$$1. \begin{bmatrix} 2 & 4 & 2 \\ -1 & -7 & 22 \end{bmatrix} \quad 2. \begin{bmatrix} -5 & -4 \\ -5 & -13 \\ 34 & 9 \end{bmatrix} \quad 3. 10 \times 1. \quad 4. \text{Not Possible.} \quad 5. \begin{bmatrix} 12 & -51 \\ 0 & 0 \\ 4 & -31 \\ -8 & 62 \end{bmatrix}$$

$$6. \begin{bmatrix} -20 & 52 \\ 0 & -8 \\ -8 & 35 \end{bmatrix} \quad 7. \text{Not Possible.} \quad 8. \begin{bmatrix} 28 & -36 & 20 \\ -57 & 39 & -45 \\ 62 & -66 & 46 \\ -91 & 69 & -71 \end{bmatrix}$$