

## 4.10 Matrices

AP Precalculus

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

CA #2

**Directions: Simplify the following matrices to a single matrix.**

$$1) \begin{bmatrix} 0 & 2 \\ 6 & -4 \\ 4 & 3 \end{bmatrix} + \begin{bmatrix} 2 & -1 \\ 8 & 9 \\ -1 & -3 \end{bmatrix}$$

$$2) 4 \begin{bmatrix} 1 & 0 \\ -9 & 4 \end{bmatrix} - 2 \begin{bmatrix} 1 & -8 \\ -3 & 4 \end{bmatrix}$$

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

$$3) (3 \times 15) \times (15 \times 2)$$

$$4) (5 \times 5) \times (5 \times 5)$$

**Directions: Multiply the following matrices. No Calculators.**

$$5) \begin{bmatrix} 3 \\ 2 \\ -5 \\ 5 \end{bmatrix} \cdot [12 \quad -3]$$

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

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

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

#### ANSWERS

$$1. \begin{bmatrix} 2 & 1 \\ 14 & 5 \\ 3 & 0 \end{bmatrix} \quad 2. \begin{bmatrix} 2 & 16 \\ -30 & 8 \end{bmatrix} \quad 3. 3 \times 2. \quad 4. 5 \times 5. \quad 5. \begin{bmatrix} 36 & -9 \\ 24 & -6 \\ -60 & 15 \\ 60 & -15 \end{bmatrix} \quad 6. \begin{bmatrix} -34 & 28 \\ -139 & 112 \end{bmatrix}$$

$$7. \text{ Not Possible.} \quad 8. \begin{bmatrix} -4 & -12 \\ 20 & 2 \\ -36 & -21 \\ 79 & 5 \end{bmatrix}$$