

12 REVIEW – Matrices (part 1)**NO GRAPHING CALCULATOR**Solve for x and y .

$$1) 2 \begin{bmatrix} -1 & x \\ 8 & -4 \end{bmatrix} - \begin{bmatrix} 1 & -7 \\ 5 & 0 \end{bmatrix} = \begin{bmatrix} -3 & 21 \\ 11 & y \end{bmatrix} \qquad 2) x \begin{bmatrix} 2 & y \\ -7 & 5 \end{bmatrix} + \begin{bmatrix} 2 & 3 \\ 7 & 19 \end{bmatrix} = \begin{bmatrix} x & 3 \\ 21 & 9 \end{bmatrix}$$

The dimensions of Matrix A and Matrix B are listed. What are the dimensions of the product of AB ? If it is not possible, then write “undefined.”

Find the product of the two matrices. SHOW YOUR WORK and box your final answer.

- 3) Matrix A : 1×7
Matrix B : 1×7

$$5) \begin{bmatrix} -1 & -4 \\ 5 & -3 \end{bmatrix} \begin{bmatrix} 1 & 1 & 1 \\ 4 & 3 & 1 \end{bmatrix}$$

Matrix AB : _____ x _____

- 4) Matrix A : 3×4
Matrix B : 4×2

Matrix AB : _____ x _____

For 6-7, solve for the variables x and y . SHOW YOUR WORK!

$$6) \begin{bmatrix} -1 & -1 \\ 4 & x \end{bmatrix} \cdot \begin{bmatrix} y & 4 \\ -6 & -2 \end{bmatrix} = \begin{bmatrix} 12 & -2 \\ -36 & 12 \end{bmatrix}$$

$$7) \begin{bmatrix} -6 & y \end{bmatrix} \cdot \begin{bmatrix} x & 4 \\ 2 & 5 \end{bmatrix} = \begin{bmatrix} -34 & -49 \end{bmatrix}$$

Algebra 2 – Unit 12

Name: _____ Date: _____ Period: _____

ID: 1

12 REVIEW – Matrices (part 2)

GRAPHING CALCULATOR ALLOWED

Simplify. Write “undefined” for expressions that are undefined.

8) $[-6 \quad -1 \quad 4 \quad 5] + [1 \quad 3 \quad -6 \quad -4]$	9) $\begin{bmatrix} -2 & -3 \\ 6 & -4 \\ 3 & 0 \end{bmatrix} + \begin{bmatrix} 2 & 4 \\ -4 & -5 \\ -6 & 4 \end{bmatrix} + \begin{bmatrix} -2 & -1 \\ 1 & 4 \\ 6 & -5 \end{bmatrix}$
10) $[-3 \quad -4 \quad 4] - ([6 \quad -2 \quad -3] - [-1 \quad 2 \quad -5])$	11) Solve: $C + \begin{bmatrix} -9 \\ -9 \\ -6 \end{bmatrix} = \begin{bmatrix} -9 \\ -7 \\ 4 \end{bmatrix}$
12) Solve: $-2B + \begin{bmatrix} -1 \\ 9 \\ 7 \end{bmatrix} = \begin{bmatrix} 13 \\ -5 \\ -3 \end{bmatrix}$	13) Find the inverse of the 2x2 matrix. Show your work. $\begin{bmatrix} -5 & 8 \\ -4 & 6 \end{bmatrix}$
14) Solve the matrix equation with a graphing calculator. $\begin{bmatrix} 1 & -4 \\ 3 & -8 \end{bmatrix} X = \begin{bmatrix} -7 \\ -5 \end{bmatrix}$	15) Solve the system using a matrix equation. Set up the matrices in the space below, then use a calculator to solve it. $\begin{aligned} z &= -3x + 3y + 11 \\ -3x + 7y - 7z &= 3 \\ -2x + 2y - 6z &= 30 \end{aligned}$

16) Nancy asked the students in two chemistry classes how many students went to a movie, went to a concert, or went shopping last weekend. She recorded the results in two matrices. Find the total for the two classes.

	M	C	S
Males	6	2	2
Females	0	3	8

	M	C	S
Males	4	1	1
Females	3	5	4

17) The first number multiplied by 2 is the opposite of the second number. The third number is subtracted from the product of the second number and 3 to get 20. The sum of the first and third numbers is -5. Use a matrix equation to solve for these three numbers.

18) A company stocks items A , B , and C at each of its two stores. Use matrix multiplication to determine the value of the inventory at each store if item A costs \$10, item B costs \$8, and item C costs \$7. Write your answer in a matrix with appropriate labels for the rows and columns.

	Inventory		
	Item A	Item B	Item C
Store 1	7	9	8
Store 2	10	5	9