Name _____ Date _____ Period _____

9.2 – Matrices II

I. Perform the indicated operation.

1. $\begin{bmatrix} 1 & 2 \\ -3 & 1 \end{bmatrix} + \begin{bmatrix} 1 & 5 \\ 2 & 0 \end{bmatrix}$	2. $\begin{bmatrix} 4 & 2 \\ -9 & 5 \end{bmatrix} - \begin{bmatrix} 2 & 8 \\ 4 & 8 \end{bmatrix}$
3. $\begin{bmatrix} 7 & -3 & 2 \\ 0 & 8 & 1 \\ 8 & 6 & -6 \end{bmatrix} + \begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$	4. $\begin{bmatrix} 9 & 1 & 6 \\ -5 & 0 & 9 \\ 2 & -2 & 3 \end{bmatrix} + \begin{bmatrix} 9 & 0 & 4 \\ -4 & 6 & 8 \\ 3 & -5 & -6 \end{bmatrix}$
5. $\begin{bmatrix} 0 & -8 \\ 3 & 0 \\ -4 & 2 \end{bmatrix} - \begin{bmatrix} 5 & 4 \\ 2 & 5 \\ -7 & -5 \end{bmatrix}$	6. $\begin{bmatrix} 2 & -1 & 7 \\ 5 & 8 & 2 \end{bmatrix} - \begin{bmatrix} 2 & 9 & 3 \\ -5 & 2 & -2 \end{bmatrix}$

II. Given the following matrices, perform the indicated matrix operations.

$$A = \begin{bmatrix} 1 & 3 \\ -2 & 5 \\ 2 & 4 \end{bmatrix} \qquad B = \begin{bmatrix} 4 & 9 \\ 7 & 1 \\ -2 & 6 \end{bmatrix}$$

7. A + B =	8. A – B =	9. –2A =

10.   **Women in Labor Force (millions)**   Subtract the two matrices.
What does this result represent?

All Women   Women with Children

$$
\begin{array}{c}
\text{Married} \quad \text{Other}^* \\
\begin{array}{c} 1989 \\ 1990 \\ 1991 \end{array}
\begin{bmatrix} 30.5 & 24.7 \\ 31.0 & 25.2 \\ 31.1 & 25.2 \end{bmatrix}
\end{array}
\qquad
\begin{array}{c}
\text{Married} \quad \text{Other}^* \\
\begin{array}{c} 1989 \\ 1990 \\ 1991 \end{array}
\begin{bmatrix} 16.4 & 5.5 \\ 16.5 & 5.7 \\ 16.6 & 5.8 \end{bmatrix}
\end{array}
$$

*widowed, divorced, separated, or single

Does adding these matrices give a meaningful result? Justify your answer.

11. Last month a manufacturer shipped three computer models to two warehouses. The units shipped are shown in the following matrix:

       This month the company wants to double the number of units.
Use scalar multiplication to find the number of units to ship.

$$
\begin{array}{c}
\qquad\quad \text{whse 1} \quad \text{whse 2} \\
\begin{array}{c} \text{Model A} \\ \text{Model B} \\ \text{Model C} \end{array}
\begin{bmatrix} 100 & 50 \\ 60 & 45 \\ 25 & 40 \end{bmatrix}
\end{array}
$$

III. Solve for the variables.

12. $\begin{bmatrix} x+2 & 8 \\ 2y & 2z \end{bmatrix} = \begin{bmatrix} 2x+6 & 8 \\ 18 & -8 \end{bmatrix}$	13. $\begin{bmatrix} 2x & 8 \\ y & -6 \end{bmatrix} + \begin{bmatrix} 3 & -2 \\ x & 5 \end{bmatrix} = \begin{bmatrix} 5 & 6 \\ 3 & -1 \end{bmatrix}$
14. $\begin{bmatrix} 2x-5 & 4 \\ 3 & 3y+12 \end{bmatrix} = \begin{bmatrix} 25 & 4 \\ 3 & y+18 \end{bmatrix}$	15. $\begin{bmatrix} x+8 & -5 \\ 3 & -y \end{bmatrix} = \begin{bmatrix} 38 & -5 \\ 3 & 4y-10 \end{bmatrix}$
16. $\begin{bmatrix} 3x \\ 4 \end{bmatrix} = \begin{bmatrix} -9 \\ y+6 \end{bmatrix}$	17. $\begin{bmatrix} 2 & 2 \\ -1 & 6 \end{bmatrix} - \begin{bmatrix} 4 & -1 \\ 0 & 5 \end{bmatrix} = \begin{bmatrix} x & y \\ -1 & z \end{bmatrix}$