1.2 WORKSHEET ON OPERATIONS ON MATRICES

NAME:_____ SECTION: _____

Note: Show the complete solution.

PART I. (12 pts)
Perform the indicated operations.

$$\boldsymbol{H} = \begin{bmatrix} \mathbf{-2} & \mathbf{6} & \mathbf{5} \\ \mathbf{4} & \mathbf{-7} & \mathbf{8} \\ \mathbf{-2} & \mathbf{-3} & \mathbf{10} \end{bmatrix} \qquad \boldsymbol{A} = \begin{bmatrix} \mathbf{-5} & \mathbf{-4} & \mathbf{-5} \\ \mathbf{2} & \mathbf{-2} & \mathbf{3} \\ \mathbf{0} & \mathbf{1} & \mathbf{-6} \end{bmatrix} \qquad \boldsymbol{U} = \begin{bmatrix} \mathbf{-6} & \mathbf{2} \\ \mathbf{-3} & \mathbf{-5} \\ \mathbf{4} & \mathbf{3} \end{bmatrix}$$

1. $H + A$
2. $-4A$
3. AU

PART II (8 pts)
Find the value of the unknown variables. *(M,P,R,K,W,G)*

1. $\begin{bmatrix} 9 & -3 \\ -3 & 9 \\ -6 & 6 \end{bmatrix} + \begin{bmatrix} M & -8 \\ 5 & 3 \\ -7 & 4 \end{bmatrix} = \begin{bmatrix} -1 & -11 \\ 2 & 2P \\ -13 & 10 \end{bmatrix}$

2. $\begin{bmatrix} 4 & W \\ 5 & -1 \\ -2 & 3 \end{bmatrix} x \quad \begin{bmatrix} -2 & -2G & -1 \\ -1 & 3 & 2 \end{bmatrix} = \begin{bmatrix} -8 & -16 & -4 \\ -9 & -23 & -7 \\ 1 & 17 & 8 \end{bmatrix}$

(Note: x is the multiplication symbol)

Part III. (10 pts)
At the beginning of January, the central computer showed the following books in stock.

	Hardcover	Softcover	Plastic cover
Angeles City	1500	1200	1000
City of San Fernando	1850	2100	800

Suppose its sales in January were as follows: 728 hardcover books, 956 softcover books, and 785 plastic cover books sold in Angeles City, and 1310 hardcover books, 1750 softcover books, and 725 plastic cover books sold in City of San Fernando.

*Write these sales figures in the form of matrix, and then show how matrix algebra can be used to compute the inventory remaining in each store at the end of January.