Secondary 2H **Name**_____ **Desk** _____

Unit 6 **Basic Operations of Matrices**

Score _____

SHOW ALL WORK.

Use matrices *A, B, C,* and *D* to find the following. If the matrix does not exist, write *impossible.*

$A=\begin{bmatrix}2 & 3\\ 5 & 6\end{bmatrix}$ $B=\begin{bmatrix}-1 & 7\\ 0 & -4\end{bmatrix}$ $C=\begin{bmatrix}9 & -4\\ -6 & 5\end{bmatrix}$ $D=\begin{bmatrix}2 & -5\end{bmatrix}$

1. $A+B+C$ 2. $3B-2C$ 3. $4A+2B-C$

4. $B+2C+D$ 5. $3C-A$ 6. $\frac{1}{2}D$

Use matrices *E, F, G,* and *H* to find the following. If the matrix does not exist, write *impossible*.

$E=\begin{bmatrix}5 & 7\\ -1 & 6\\ 3 & -9\end{bmatrix}$ $F=\begin{bmatrix}8 & 3\\ 5 & 1\\ 4 & 4\end{bmatrix}$ $G=\begin{bmatrix}0 & 4\\ -2 & 5\\ 7 & -1\end{bmatrix}$ $H=\begin{bmatrix}6 & 2\\ 9 & 0\\ -3 & 0\end{bmatrix}$

7. $E+F$ 8. $H-F$ 9. $4G$

10. $6F-2E$ 11. $3G-4E+F$ 12. $G+\frac{1}{3}H$

Use matrices *J, K, L,* and *M* to find the following. If the matrix does not exist, write *impossible.*

$$J = \begin{bmatrix} 4 & -2 \\ 3 & 8 \end{bmatrix} \qquad K = \begin{bmatrix} 1 & -7 & 6 \\ 3 & -5 & 0 \end{bmatrix} \qquad L = \begin{bmatrix} 2 & -1 \\ -6 & 6 \\ 5 & 2 \end{bmatrix} \qquad M = \begin{bmatrix} 4 & -3 & 3 \\ 5 & 2 & 6 \\ 3 & -1 & 2 \end{bmatrix}$$

13. $J \cdot J$

14. $J \cdot K$

15. $J \cdot L$

16. $K \cdot J$

17. $K \cdot K$

18. $K \cdot L$

19. $K \cdot M$

20. $L \cdot K$

21. $L \cdot M$