

Place **ANSWERS ONLY** in the boxes.

Class Time \_\_\_\_\_

Given the following matrices,

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

Find the following or write "NOT POSSIBLE" if it cannot be done.

1)  $2A - 3B$

2)  $A + 4D$

3)  $AD - 2C$

4)  $AC$

5)  $CA$

6)  $D(A + B) + 3E$

7) If  $\begin{bmatrix} 3 & 1 \\ x & 2 \end{bmatrix} \cdot \begin{bmatrix} 1 & 2 \\ -2 & 3 \end{bmatrix} = \begin{bmatrix} 1 & 9 \\ -9 & -4 \end{bmatrix}$  then find x.

8) If  $2 \begin{bmatrix} x & 1 \\ y & 2 \end{bmatrix} - 3 \begin{bmatrix} 1 & z \\ -2 & 3 \end{bmatrix} = \begin{bmatrix} 5 & 5 \\ 2 & -5 \end{bmatrix}$  then.....

x =

y =

z =

Given the following matrices,

$$A = \begin{bmatrix} 2 & 1 \\ -2 & 3 \end{bmatrix} \quad B = \begin{bmatrix} 1 & 0 & -2 \\ 3 & -2 & -1 \\ -3 & 0 & 2 \end{bmatrix}$$

9) Calculate the following.

a)  $A^{-1} =$

b)  $B^{-1} =$

10a) Write the following system of linear equations in the form  $AX = B$  (All matrices)

$$5x + 2y = -7$$

$$x + y - 4z = 9$$

$$3x + y - 3z = 1$$

b) Solve the system.

$x =$    $y =$    $z =$