Name_____ Math 12H Matrices Review

The matrices A, B, C, D, and E are defined as follows:

$$A=\begin{bmatrix}-1 & 1\\ 2 & 0\\ 4 & 4\end{bmatrix} \quad B=\begin{bmatrix}2 & 5\\ -5 & -13\end{bmatrix} \quad C=\begin{bmatrix}3 & -1 & 2\\ 5 & 4 & 1\end{bmatrix} \quad D=\begin{bmatrix}4 & 7\\ -1 & 3\\ -2 & -5\end{bmatrix} \quad E=\begin{bmatrix}0 & -2 & 2\\ 3 & 1 & 3\\ 1 & -2 & 3\end{bmatrix}$$

(1) Find 2D – A

(2) Find AC

(3) Find B^{-1}

(4) Solve for X: $\frac{X}{2}+4A=3D$

(5) Find $|E|$

(6) Find the inverse of matrix E

(7) Explain why BE does not exist

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(8) Find the area of the triangle with vertices (-1,4), (2,6), and (1,0).

(9) Solve for x: $\begin{vmatrix}7-2x & -1\\ 5x+2 & 4\end{vmatrix}=3$

(10) Given: $A=\begin{bmatrix}-1 & 5 & 1\\ 2 & -6 & -1\\ 4 & 3 & 5\end{bmatrix}$ Find C_{32}

(11) Use a determinant to find an equation of the line passing through the points (2,-5) and (-1,-1).

(12) Find the solution to the system of linear equations with each augmented matrix:

(a) $\left[\begin{array}{cc|c}2 & 1 & 7\\ 5 & -3 & 1\end{array}\right]$ (b) $\left[\begin{array}{ccc|c}-3 & 5 & 2 & -1\\ 0 & 2 & 4 & 6\\ 0 & 0 & -1 & 2\end{array}\right]$

(13)Using Cramer's Rule solve the following system of linear equations:

$3x+2y-5z=-10$

$2x+4y+z=0$

$x-6y-4z=-3$

(14) Using any of the methods discussed during class solve the following linear systems:

(a) $x+y-z=-1$

$2x+3y-z=-2$

$-3x-2y+2z=-3$

(b) $6x-9y+4z=-7$

$2x+6y-z=6$

$4x-3y+2z=-2$