Pre-Calculus AB Name_____

Worksheet 40 - Matrices

Date_____ Period____

Evaluate each determinant.

1) $\begin{vmatrix} 4 & 5 \\ 5 & 2 \end{vmatrix}$

2) $\begin{vmatrix} 1 & 5 \\ 4 & -5 \end{vmatrix}$

3) $\begin{vmatrix} 4 & 0 & -2 \\ -3 & -3 & 2 \\ -4 & 4 & 0 \end{vmatrix}$

4) $\begin{vmatrix} 4 & -1 & 3 \\ -4 & -2 & 1 \\ 3 & -3 & 2 \end{vmatrix}$

Simplify. Write "undefined" for expressions that are undefined.

5) $\begin{bmatrix} -2 & -6 & 6 \\ -5 & -3 & -6 \end{bmatrix} - \begin{bmatrix} -3 & -5 & -1 \\ -5 & 1 & -1 \end{bmatrix}$

6) $\begin{bmatrix} 6 & -3 \\ 2 & -5 \end{bmatrix} + \begin{bmatrix} 1 & -4 \\ 3 & -3 \end{bmatrix}$

7) $\begin{bmatrix} j^2 \\ kj \\ 4h \\ -4k \end{bmatrix} - \left(\begin{bmatrix} 4+j \\ jk \\ -6k \\ j+6 \end{bmatrix} + \begin{bmatrix} h+j \\ 5j \\ 5j \\ -6k \end{bmatrix} \right)$

8) $4\left(\begin{bmatrix} -6u+5 \\ 0 \\ -6+v \end{bmatrix} - \begin{bmatrix} 5v+5 \\ 1 \end{bmatrix} \right)$

9) Determine if the following system of equations has exactly one solutions, no solutions or infinitely many solutions. DO NOT SOLVE IT.

$7x + 4y = 1$
$2x + 5y = -4$

10) Determine if the following system of equations has exactly one solutions, no solutions or infinitely many solutions. DO NOT SOLVE IT.

$7x - y = 1$
$-21x + 3y = -3$

11) Determine if the following system of equations is independent. DO NOT SOLVE.

$5x - y + 2z = 121$
$6y + 8z = -560$
$-3x + z = 34$

12) Determine if the following system of equations is independent. DO NOT SOLVE IT.

$4x - 2y + 2z = 5$
$3x - 4y = 7$
$x + 2y + 2z = -10$

13) Solve using your calculator:

$4x - 2y + 2z = 5$
$3x - 4y = 7$
$x + 2y - z = -10$

14) Solve using your calculator:

$6w - y + 2z = 71$
$-4w + 5x - z = 20$
$w + 2x + 9y = -13$
$-7x + 2y + 13z = 5$