Precaluclus Review Name_____

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

1) $4\left(\begin{bmatrix} 2 \\ -5 \end{bmatrix} - \begin{bmatrix} 3 \\ -4 \end{bmatrix}\right)$

$\begin{bmatrix} -4 \\ -4 \end{bmatrix}$

2) $-2 \cdot \left(\begin{bmatrix} -6 & 0 \\ -2 & 5 \\ 5 & -4 \end{bmatrix} \cdot \begin{bmatrix} -6 & 4 \\ -4 & -3 \\ 5 & -1 \end{bmatrix}\right)$

Undefined

3) $-3\left(\begin{bmatrix} 5 & -6 \\ -1 & 4 \end{bmatrix} - \begin{bmatrix} 0 & -4 \\ -2 & -2 \end{bmatrix}\right)$

$\begin{bmatrix} -15 & 6 \\ -3 & -18 \end{bmatrix}$

4) $\begin{bmatrix} -3 & -3 \\ 4 & 3 \end{bmatrix} \cdot \left(\begin{bmatrix} -4 & -4 \\ -5 & -6 \end{bmatrix} - \begin{bmatrix} 2 & -6 \\ -3 & -4 \end{bmatrix}\right)$

$\begin{bmatrix} 24 & 0 \\ -30 & 2 \end{bmatrix}$

5) $\begin{bmatrix} 1 & 4 & -2 \\ 0 & -2 & -3 \end{bmatrix} - \begin{bmatrix} 0 & 5 & -5 \\ 6 & 2 & -6 \end{bmatrix} \cdot \begin{bmatrix} 0 & 2 & -1 \\ 1 & 4 & 4 \end{bmatrix}$

Undefined

6) $\left(\begin{bmatrix} -6 & 0 \\ 4 & 0 \end{bmatrix} + \begin{bmatrix} 5 & -6 \\ 0 & -5 \end{bmatrix}\right) \cdot \begin{bmatrix} -1 & 2 \\ 4 & 6 \end{bmatrix}$

$\begin{bmatrix} -23 & -38 \\ -24 & -22 \end{bmatrix}$

Find the inverse of each matrix.

7) $\begin{bmatrix} 2 & 2 \\ -8 & 2 \end{bmatrix}$

$\frac{1}{20} \cdot \begin{bmatrix} 2 & -2 \\ 8 & 2 \end{bmatrix}$

8) $\begin{bmatrix} 9 & -9 \\ 2 & 1 \end{bmatrix}$

$\frac{1}{27} \cdot \begin{bmatrix} 1 & 9 \\ -2 & 9 \end{bmatrix}$

Evaluate each determinant.

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

5

10) $\begin{vmatrix} 3 & 0 \\ -5 & -1 \end{vmatrix}$

-3

Solve each system by elimination.

11) $x + 4y + 3z = -18$
$5x + y + 2z = -15$
$-x - 2y - 6z = -3$

$(-3, -6, 3)$

12) $2x - 5y - z = 16$
$-2x + 3y + 4z = 3$
$-4x + 4y - 5z = -23$

$(-3, -5, 3)$

13) $-6x + 5y - 4z = 0$
$2x + 2y + z = 7$
$6x + y - 4z = 4$

$(1, 2, 1)$