Pre-Calc Name_____ ID: 1

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Matrix Operations and Determinants

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

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

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

3) $-3\begin{bmatrix} 0 \\ 1 \\ 5 \\ -2 \end{bmatrix}$

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

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

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

Evaluate each determinant.

7) $\begin{vmatrix} 3 & 4 \\ 5 & -1 \end{vmatrix}$

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

9) $\begin{vmatrix} -1 & -5 & 3 \\ 2 & -2 & 0 \\ -1 & -4 & 4 \end{vmatrix}$

10) $\begin{vmatrix} -5 & -2 & -5 \\ 0 & 4 & 4 \\ 2 & 2 & -5 \end{vmatrix}$

Solve each equation or state if there is no unique solution.

11) $-4Y = \begin{bmatrix} -16 & -24 & -4 \end{bmatrix}$

12) $\begin{bmatrix} 1 & -3 \\ 1 & -3 \end{bmatrix} Y = \begin{bmatrix} -29 & 1 \\ -29 & 1 \end{bmatrix}$

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13) $4A = \begin{bmatrix} -24 & 12 \end{bmatrix}$

14) $\begin{bmatrix} -1 & -10 & -8 \end{bmatrix} = \begin{bmatrix} -8 & 1 & -3 \end{bmatrix} - Y$

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