

HW #34 Example - Matrix Multiplication

Evaluate each determinant.

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

- A) -10 B) -13
C) -29 D) -17

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

- A) -55 B) -264
C) -61 D) -3

Find the inverse of each matrix.

3) $\begin{bmatrix} -1 & -7 \\ -8 & -5 \end{bmatrix}$

- A) $\frac{1}{33} \cdot \begin{bmatrix} -5 & 7 \\ 1 & -8 \end{bmatrix}$
B) $\frac{1}{27} \cdot \begin{bmatrix} -5 & 8 \\ 1 & -7 \end{bmatrix}$
C) $-\frac{1}{27} \cdot \begin{bmatrix} -8 & 7 \\ 5 & -1 \end{bmatrix}$
D) $-\frac{1}{51} \cdot \begin{bmatrix} -5 & 7 \\ 8 & -1 \end{bmatrix}$

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

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

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$$\begin{bmatrix} 27 & 21 \\ 15 & -39 \end{bmatrix}$$

HW #34 Example - Matrix Multiplication

Evaluate each determinant.

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

- A) 9 B) -9
C) 6 D) 3

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

- A) -48 B) -72
C) -135 D) 4

Find the inverse of each matrix.

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

A) No inverse exists

B) $-\frac{1}{2} \cdot \begin{bmatrix} 0 & 2 \\ 1 & 0 \end{bmatrix}$

C) $\frac{1}{2} \cdot \begin{bmatrix} -2 & 0 \\ 0 & -1 \end{bmatrix}$

D) $-\frac{1}{2} \cdot \begin{bmatrix} 0 & 1 \\ 2 & 0 \end{bmatrix}$

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

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C) $\frac{1}{2} \cdot \begin{bmatrix} -2 & 0 \\ 0 & -1 \end{bmatrix}$

D) $-\frac{1}{2} \cdot \begin{bmatrix} 0 & 1 \\ 2 & 0 \end{bmatrix}$

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

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

$$\begin{bmatrix} -42 & -69 & 6 \\ -34 & -48 & 7 \end{bmatrix}$$

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

- A) -5 B) 5
C) -20 D) 1

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

- A) 39 B) 69
C) -51 D) 55

Find the inverse of each matrix.

3) $\begin{bmatrix} -6 & 10 \\ 1 & 2 \end{bmatrix}$

- A) $\frac{1}{26} \cdot \begin{bmatrix} 2 & 6 \\ -1 & 10 \end{bmatrix}$
B) $-\frac{1}{22} \cdot \begin{bmatrix} -6 & -10 \\ -1 & 2 \end{bmatrix}$
C) $-\frac{1}{22} \cdot \begin{bmatrix} 2 & -10 \\ -1 & -6 \end{bmatrix}$
D) No inverse exists

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

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

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Find the inverse of each matrix.

3) $\begin{bmatrix} -6 & 10 \\ 1 & 2 \end{bmatrix}$

- A) $\frac{1}{26} \cdot \begin{bmatrix} 2 & 6 \\ -1 & 10 \end{bmatrix}$
 B) $-\frac{1}{22} \cdot \begin{bmatrix} -6 & -10 \\ -1 & 2 \end{bmatrix}$
 *C) $-\frac{1}{22} \cdot \begin{bmatrix} 2 & -10 \\ -1 & -6 \end{bmatrix}$
 D) No inverse exists

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

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

$$\begin{bmatrix} -20 & -6 \\ -71 & -39 \end{bmatrix}$$