

4-3**Using Matrices to Transform Geometric Figures****Warm Up**

Perform the indicated operation.

1. $\begin{bmatrix} 1 & 3 & 4 \\ 2 & 5 & 8 \end{bmatrix} + \begin{bmatrix} -1 & 1 & 1 \\ -3 & -3 & -3 \end{bmatrix}$

2. $2\begin{bmatrix} 5 & 2 & 0 \\ 1 & 6 & 1 \end{bmatrix}$

3. $\begin{bmatrix} 1 & 0 \\ 0 & -1 \end{bmatrix} \begin{bmatrix} 1 & 3 & 4 \\ 2 & 5 & 8 \end{bmatrix}$

4-4**Determinants and Cramer's Rule****Warm Up**

Determine whether each system has zero, one, or infinitely many solutions.

1. $\begin{cases} 3x + y = 15 \\ 3x - 2y = 6 \end{cases}$

2. $\begin{cases} x + 2y = 18 \\ -2x - 4y = -36 \end{cases}$

3. $\begin{cases} 2x + 3y = 35 \\ 4x + 6y = 75 \end{cases}$

4-3

Using Matrices to Transform Geometric Figures

Warm Up

Perform the indicated operation.

$$1. \begin{bmatrix} 1 & 3 & 4 \\ 2 & 5 & 8 \end{bmatrix} + \begin{bmatrix} -1 & 1 & 1 \\ -3 & -3 & -3 \end{bmatrix} \quad \begin{bmatrix} 2 & 4 & 5 \\ -1 & 2 & 5 \end{bmatrix}$$

$$2. 2 \begin{bmatrix} 5 & 2 & 0 \\ 1 & 6 & 1 \end{bmatrix} \quad \begin{bmatrix} 10 & 4 & 0 \\ 2 & 12 & 2 \end{bmatrix}$$

$$3. \begin{bmatrix} 1 & 0 \\ 0 & -1 \end{bmatrix} \begin{bmatrix} 1 & 3 & 4 \\ 2 & 5 & 8 \end{bmatrix} \quad \begin{bmatrix} 1 & 3 & 4 \\ -2 & -5 & -8 \end{bmatrix}$$

4-4

Determinants and Cramer's Rule

Warm Up

Determine whether each system has zero, one, or infinitely many solutions.

$$1. \begin{cases} 3x + y = 15 \\ 3x - 2y = 6 \end{cases} \quad \text{one}$$

$$2. \begin{cases} x + 2y = 18 \\ -2x - 4y = -36 \end{cases} \quad \text{inf. many}$$

$$3. \begin{cases} 2x + 3y = 35 \\ 4x + 6y = 75 \end{cases} \quad \text{zero}$$