

Matrices

Name: _____

Date: _____

Find whether inverse does exist for the given matrices:

1)

$$\begin{bmatrix} 3 & \frac{5}{2} & 6 \\ -3 & 7 & 4 \\ \frac{5}{2} & -5 & 6 \end{bmatrix}$$

$$\Delta = \underline{\hspace{2cm}}$$

Conclusion: _____

2)

$$\begin{bmatrix} 12 & 3 & 9 \\ 1 & 0 & 1 \\ 1 & 1 & 0 \end{bmatrix}$$

$$\Delta = \underline{\hspace{2cm}}$$

Conclusion: _____

3)

$$\begin{bmatrix} 2 & 5 & 11 \\ 1 & 1 & 1 \\ 2 & 1 & -1 \end{bmatrix}$$

$$\Delta = \underline{\hspace{2cm}}$$

Conclusion: _____

4)

$$\begin{bmatrix} 7 & 8 & -2 \\ \frac{4}{3} & 6 & 9 \\ 3 & 4 & 1 \end{bmatrix}$$

$$\Delta = \underline{\hspace{2cm}}$$

Conclusion: _____

5)

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

$$\Delta = \underline{\hspace{2cm}}$$

Conclusion: _____

6)

$$\begin{bmatrix} 8 & \frac{1}{4} & -2 \\ 7 & 8 & 1 \\ 3 & 9 & 2 \end{bmatrix}$$

$$\Delta = \underline{\hspace{2cm}}$$

Conclusion: _____

7)

$$\begin{bmatrix} 3 & 2 & -9 \\ 5 & 6 & 8 \\ -1 & 3 & \frac{2}{3} \end{bmatrix}$$

$$\Delta = \underline{\hspace{2cm}}$$

Conclusion: _____

8)

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

$$\Delta = \underline{\hspace{2cm}}$$

Conclusion: _____

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Find whether inverse does exist for the given matrices:

1)

$$\begin{bmatrix} 3 & \frac{5}{2} & 6 \\ -3 & 7 & 4 \\ \frac{5}{2} & -5 & 6 \end{bmatrix}$$

$$\Delta = 241 \neq 0$$

Conclusion: Inverse exist

2)

$$\begin{bmatrix} 12 & 3 & 9 \\ 1 & 0 & 1 \\ 1 & 1 & 0 \end{bmatrix}$$

$$\Delta = 0$$

Conclusion: Inverse does not exist

3)

$$\begin{bmatrix} 2 & 5 & 11 \\ 1 & 1 & 1 \\ 2 & 1 & -1 \end{bmatrix}$$

$$\Delta = 0$$

Conclusion: Inverse does not exist

4)

$$\begin{bmatrix} 7 & 8 & -2 \\ \frac{4}{3} & 6 & 9 \\ 3 & 4 & 1 \end{bmatrix}$$

$$\Delta = \frac{62}{3} \neq 0$$

Conclusion: Inverse exist

5)

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

$$\Delta = 0$$

Conclusion: Inverse does not exist

6)

$$\begin{bmatrix} 8 & \frac{1}{4} & -2 \\ 7 & 8 & 1 \\ 3 & 9 & 2 \end{bmatrix}$$

$$\Delta = \frac{-99}{4} \neq 0$$

Conclusion: Inverse exist

7)

$$\begin{bmatrix} 3 & 2 & -9 \\ 5 & 6 & 8 \\ -1 & 3 & \frac{2}{3} \end{bmatrix}$$

$$\Delta = \frac{-815}{3} \neq 0$$

Conclusion: Inverse exist

8)

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

$$\Delta = 0$$

Conclusion: Inverse does not exist