

Matrices

Name: _____

Date: _____

Find whether inverse does exist for the given matrices:

1)

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

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

Conclusion: _____

2)

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

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

Conclusion: _____

3)

$$\begin{bmatrix} 5 & \frac{1}{2} & 6 \\ 4 & 7 & 3 \\ -8 & -6 & 1 \end{bmatrix}$$

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

Conclusion: _____

4)

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

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

Conclusion: _____

5)

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

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

Conclusion: _____

6)

$$\begin{bmatrix} 5 & \frac{1}{2} & -3 \\ 10 & 1 & 0 \\ 2 & 5 & 4 \end{bmatrix}$$

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

Conclusion: _____

7)

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

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

Conclusion: _____

8)

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

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

Conclusion: _____

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Date: _____

Find whether inverse does exist for the given matrices:

1)

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

$$\Delta = 0$$

Conclusion: Inverse does not exist

2)

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

$$\Delta = 330 \neq 0$$

Conclusion: Inverse exist

3)

$$\begin{bmatrix} 5 & \frac{1}{2} & 6 \\ 4 & 7 & 3 \\ -8 & -6 & 1 \end{bmatrix}$$

$$\Delta = 303 \neq 0$$

Conclusion: Inverse exist

4)

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

$$\Delta = 0$$

Conclusion: Inverse does not exist

5)

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

$$\Delta = 0$$

Conclusion: Inverse does not exist

6)

$$\begin{bmatrix} 5 & \frac{1}{2} & -3 \\ 10 & 1 & 0 \\ 2 & 5 & 4 \end{bmatrix}$$

$$\Delta = -144 \neq 0$$

Conclusion: Inverse exist

7)

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

$$\Delta = 0$$

Conclusion: Inverse does not exist

8)

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

$$\Delta = \frac{7}{3} \neq 0$$

Conclusion: Inverse exist