

Student Name: \_\_\_\_\_

Score: \_\_\_\_\_

## Inverse matrix

ES2

Check whether inverse exists for the following matrices:

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

$$\Delta = \boxed{\phantom{000}}$$

Conclusion: \_\_\_\_\_

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

$$\Delta = \boxed{\phantom{000}}$$

$$\begin{bmatrix} 5 & 9 & 7 \\ -2 & 3 & 2 \\ 1 & 0 & 3 \end{bmatrix}$$

$$\Delta = \boxed{\phantom{000}}$$

Conclusion: \_\_\_\_\_

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

$$\Delta = \boxed{\phantom{000}}$$

Conclusion: \_\_\_\_\_

$$\Delta = \boxed{\phantom{000}}$$

Conclusion: \_\_\_\_\_

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### Answer Key

#### Inverse matrix

ES2

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

$$\Delta = 0$$

Conclusion: Inverse

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

$$\Delta = 0$$

does not exist

$$\begin{bmatrix} 5 & 9 & 7 \\ -2 & 3 & 2 \\ 1 & 0 & 3 \end{bmatrix}$$

$$\Delta = 96 \neq 0$$

Conclusion: Inverse

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

$$\Delta = 33 \neq 0$$

Conclusion: Inverse exists

Conclusion: Inverse exists

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does not exist