

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

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

## Inverse matrix

ES1

Check whether inverse exists for the following matrices:

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

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

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

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

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

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

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

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

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

$$\begin{bmatrix} 7 & 0 & 0 \\ -7 & 10 & 5 \end{bmatrix}$$

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

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

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### Answer Key

#### Inverse matrix

ES1

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

$$\Delta = -131 \neq 0$$

Conclusion: Inverse

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

$$\Delta = 45 \neq 0$$

exists

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

$$\Delta = -6 \neq 0$$

Conclusion: Inverse

does not exist

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

$$\Delta = 0$$

Conclusion: Inverse does not exist

Conclusion: Inverse exists

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