

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

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

## Inverse matrix

MS3

Identify the existence of inverse for the matrices:

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

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

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

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

$$\begin{bmatrix} 0 & \frac{-4}{3} & 1 \\ -3 & -4 & \frac{1}{2} \\ 0 & 8 & -6 \end{bmatrix}$$

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

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

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

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**Answer Key**

**Inverse matrix**

MS3

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

$$\Delta = 3 \neq 0$$

Conclusion: Inverse exists

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

$$\begin{bmatrix} 0 & \frac{-4}{3} & 1 \\ -3 & -4 & \frac{1}{2} \\ 0 & 8 & -6 \end{bmatrix}$$

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

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Conclusion: Inverse exists