

Student Name: _____

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Inverse matrix

MS2

Check whether inverse exists for the following matrices:

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

$\Delta =$

Conclusion: _____

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

$\Delta =$

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

$\Delta =$

Conclusion: _____

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

$\Delta =$

Conclusion: _____

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

$\Delta =$

Conclusion: _____

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Answer Key

Inverse matrix

MS2

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

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

$\Delta = 0$

Conclusion: Inverse

exists

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

$\Delta = \frac{62}{5} \neq 0$

Conclusion: Inverse

does not exist

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

$\Delta = \frac{25}{2} \neq 0$

Conclusion: Inverse exists

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

$\Delta = -\frac{896}{5} \neq 0$

Conclusion: Inverse exists

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