

Student Name: _____

Score: _____

Inverse matrix

MS1

Check whether inverse exists for the following matrices:

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

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

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

$$\begin{bmatrix} 20 & -8 & -15 \\ -1 & \frac{2}{5} & \frac{3}{4} \\ \frac{-7}{3} & 2 & -4 \end{bmatrix}$$

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

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

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

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

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

$$\begin{bmatrix} \frac{5}{11} & -1 & -1 \\ 2 & \frac{3}{5} & \frac{2}{3} \\ \frac{5}{4} & \frac{-1}{2} & \frac{2}{3} \end{bmatrix}$$

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Answer Key

Inverse matrix

MS1

$$\Delta = 0$$

\therefore inverse does not exist

$$\Delta = 65 \neq 0$$

\therefore inverse exists

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

\therefore inverse exists

$$\Delta = 0$$

\therefore inverse does not exist

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

\therefore inverse exists

$$\Delta = \frac{-886}{5} \neq 0$$

\therefore inverse exists

$$\Delta = 3 \neq 0$$

\therefore inverse exists

$$\Delta = 0$$

\therefore inverse does not exist

$$\Delta = 0$$

\therefore inverse does not exist

$$\Delta = \frac{-31}{12} \neq 0$$

\therefore inverse exists