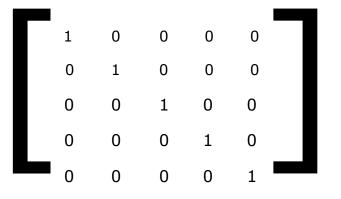## Null, Identity and Inverse Matrices - Guided Lesson Explanation

Explanation#1

An identity matrix is a square matrix in which all entries are 0s, except for the top-left to bottom-right diagonal. The diagonal contains all 1s.

The order of 5 means that the matrix is a 5 x 5 matrix.

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

Explanation#2

If the determinant of a matrix is equal to 0, no inverse exists for the matrix. We can find the determinant of a 2 x 2 matrix by:

$$A = \begin{bmatrix} p & q \\ r & s \end{bmatrix}$$

= p x s − r x q

We have inserted the number from our matrix into this format:

8 (-4) − 3(7)

-32 - 21

Δ = -53 ≠ 0

An inverse exits because the determinant is not equal to 0.

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Explanation#3

Null matrices contain all 0s. The 3 x 5 order tells us that the matrix has 3 rows and 5 columns. You can see this below:

$$\begin{bmatrix} 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 \end{bmatrix}$$