

Question No 2:+ CAS



SOLUTION:>

Given Information Suppose, we are given with following matrix:

We are given
$$A = \begin{cases} 1 & 3 - 1 & 5 \\ 0 & 1 - 4 & 2 \\ 0 & 2 - 5 & 1 \end{cases}$$

$$B = \begin{cases} 0 & 1 - 4 & 2 \\ 0 & 0 & 3 - 5 \end{cases}$$

we have to find the elementry row-operation to transform matrix A Into matrix B. We have to find The reverse row-operation to get A from B.

$$R_{3} = R_{3} - 2R_{2}$$

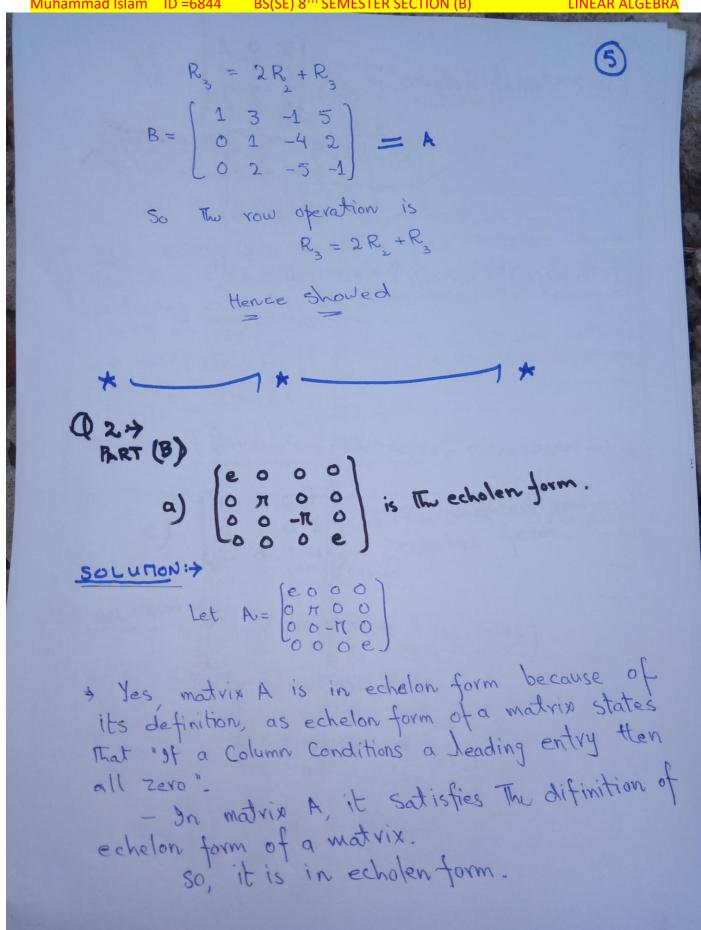
$$A = \begin{bmatrix} 1 & 3 & -1 & 5 \\ 0 & 1 & -4 & 2 \\ 0 & 0 & 3 & -5 \end{bmatrix} = B$$

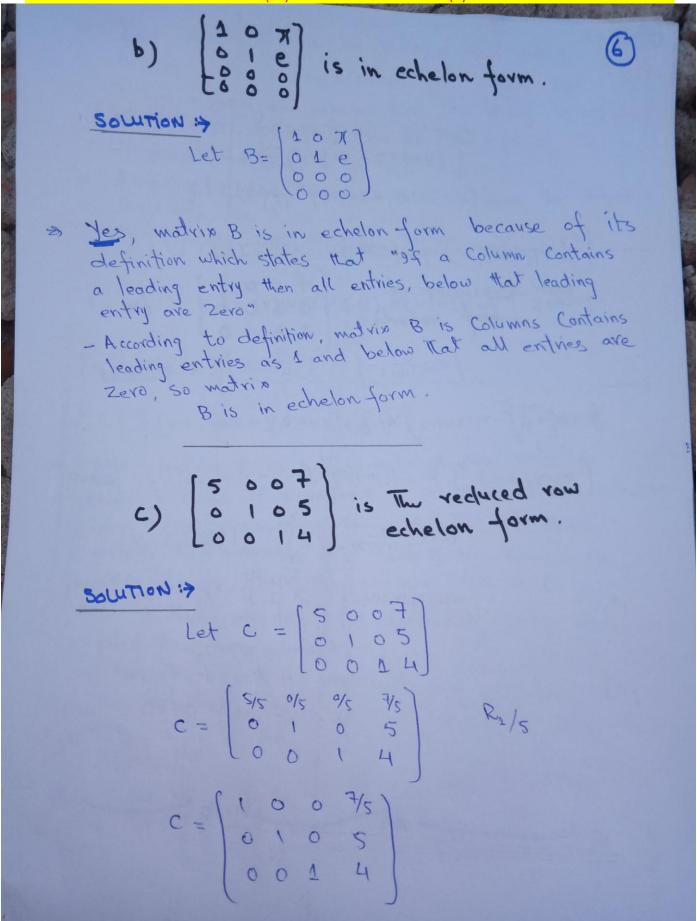
so The vow operation is $R_2 = R_3 - 2R_2$

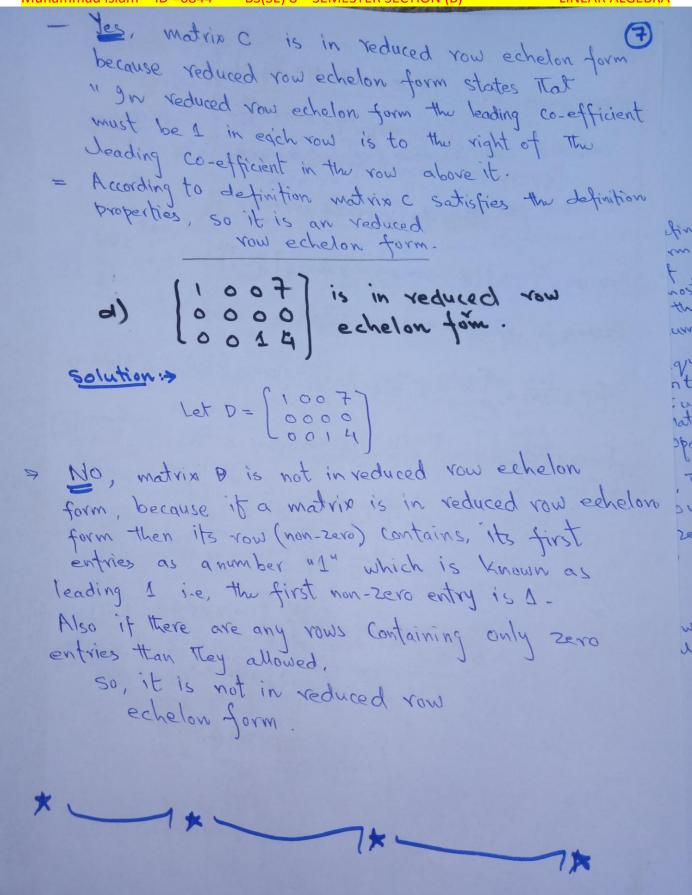
Step 2: - From B to A

Revense Row operation:

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









Answer:>

D/B row Echelon & reduced row Echelon form :-

Row Echelon form

- 11 Row echelon form from a matrix form of a matrix is defined as "The leading entry is row echelon form in echelow form in and each You (column) Is the only were hon-Zero entry in its row (Column).
- 2- Echelon form of a matrix isn't Unique which means these are infinite answers possible, when we perform row reduction or elementry operation
- 3- Each row Containing a non-zero number has the number 1 appearing in the rows first non-Zero Column. Such entry will be known as "leading entry one"

41. The entries only below The first leading non-zero entry Tat most be Zero, not mecessory for above One's.

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Reduced ROW Echelon form.

- 1- Reduced row echelon form is defined as "In reduced you echelon form The left most non-zero entry of a row is equal to 1. The leftmost non-zero entry of a row is the only non-zero entry in its column.
- 3 Reduced Row echelon form is Unique which means when we apply elementry row operation on an amatrix it will Produce the same answers, no matter now we perform the same row operation
- 3- In reduced row echelon form, The left most non-zero entry of a row is equal to 1. The left most non-zero entry of a row is the non-zero entry on its Column.
- 14- The entries above and below The first 1 in each row must all be

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Practical use of Reduced Row Echelon Form :-



- 1 This type of matrix is used to solve system of Linear equation -
- 2- Reduced Row Echelon form used in balancing chemical equations.
- 3 Sucho matrix is used to solve Computer operations.

I Example of Reduced Row Echelon Form :>

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

Question No 3:3

SOLUTION :>

Put The Value in A