

Recap Contd...

~~Well done. 3 of you have responded. 2 from 4th sem and 1 from 2nd sem. I will wait for others and post you slightly edited answers. By 20 April, you may see my face too along with this type of handwritten text. That is the reason ^{why} that I have asked you to post your details. Now, to continue ^{with} Matrix Operations let me give you one home work first.~~

H3: If the ~~was~~ elements of matrices A and B are:

$$A = \begin{bmatrix} a_{11} & a_{12} \\ a_{21} & a_{22} \end{bmatrix} \quad \text{and} \quad B = \begin{bmatrix} b_{11} & b_{12} \\ b_{21} & b_{22} \end{bmatrix} \quad (2 \times 2)$$

find a) AB and b) BA.

3. Equality of Matrices: Pretty simple operation

To ~~Remember~~ Remember:

- 1) Dimensions of given two matrices should be equal.
- 2) Corresponding elements of both the matrices must be same.

For example

$$A = \begin{bmatrix} 2 & 4 \\ 1 & -2 \end{bmatrix} \quad (2 \times 2)$$

$$B = \begin{bmatrix} 2 & 4 \\ 1 & -2 \end{bmatrix} \quad (2 \times 2)$$

$$\therefore \boxed{A = B}$$

Conditions fulfilled

- 1) Dimensions are same
- 2) Corresponding elements of A and B are of same value

Question: ~~Would~~ ^{Are} the following matrices equal?

$$A = \begin{bmatrix} 2 & -4 \\ 1 & -2 \end{bmatrix} \quad \text{and} \quad B = \begin{bmatrix} 2 & 4 \\ 1 & -2 \end{bmatrix}$$

To be contd....

Recap contd...

A few of you have solved the questions. And a lot have responded to furnish their details including 6th semester. These details are needed for you to login with User ID and Password. May be soon you will see my face and hear my voice too. However, tomorrow being Sunday, I don't think I will be able to do it on 20th, Monday. Have patience and allow me to learn more about Online Classroom. Since we said that we will explain **Matrix Division** at a later stage, we are now left with one operation i.e. **Scalar Multiplication**. As we stated earlier **scalar** may be understood as just a number. So, let us keep in mind:

- Scalar Multiplication can be of any dimension. (Dimension doesn't affect scalar multiplication.)
- The scalar (i.e. any number) multiplies each and every elements of a matrix.

Example:

Q. Multiply the given matrix with a scalar 3 where

$$A = \begin{bmatrix} 5 & 2 \\ 3 & 10 \end{bmatrix}$$

Solution.

Given scalar = 3 and matrix

$$A = \begin{bmatrix} 5 & 2 \\ 3 & 10 \end{bmatrix}$$

$$\sim 3 \times A$$

$$\sim 3 \begin{bmatrix} 5 & 2 \\ 3 & 10 \end{bmatrix} = \begin{bmatrix} (3 \times 5) & (3 \times 2) \\ (3 \times 3) & (3 \times 10) \end{bmatrix}$$

$$\sim \begin{bmatrix} 15 & 6 \\ 9 & 30 \end{bmatrix}$$

// To be contd...