

## Addition Of Matrices

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$$\begin{matrix} \textcolor{blue}{A} \\ \left[ \begin{array}{cc} \textcolor{blue}{a_1} & \textcolor{green}{b_1} \\ \textcolor{red}{c_1} & \textcolor{purple}{d_1} \end{array} \right] \end{matrix} + \begin{matrix} \textcolor{blue}{B} \\ \left[ \begin{array}{cc} \textcolor{blue}{a_2} & \textcolor{green}{b_2} \\ \textcolor{red}{c_2} & \textcolor{purple}{d_2} \end{array} \right] \end{matrix} = \begin{matrix} \textcolor{blue}{A+B} \\ \left[ \begin{array}{cc} \textcolor{blue}{a_1 + a_2} & \textcolor{green}{b_1 + b_2} \\ \textcolor{red}{c_1 + c_2} & \textcolor{purple}{d_1 + d_2} \end{array} \right] \end{matrix}$$

Subtraction of matrices  $\rightarrow$

$$\textcolor{blue}{A - B = A + (-B)}$$

If A and B are two matrices of the same order, then we define

$$A - B = A + (-B).$$

Consider the two matrices, A and B, of order 2 x 2. Then, the difference is given by:

$$\left[ \begin{array}{cc} a_1 & b_1 \\ c_1 & d_1 \end{array} \right] - \left[ \begin{array}{cc} a_2 & b_2 \\ c_2 & d_2 \end{array} \right] = \left[ \begin{array}{cc} a_1 - a_2 & b_1 - b_2 \\ c_1 - c_2 & d_1 - d_2 \end{array} \right]$$