# Solution Assignment 1

Nishanth Bhoomi , CS21BTECH11040

If A = $\begin{bmatrix} 1 & 3 \\ 3 & 4 \end{bmatrix}$ and
B = $\begin{bmatrix} -2 & 1 \\ -3 & 2 \end{bmatrix}$
and $A^2 - 5B^2 = 5C$ .Find matrix C where C is a 2 by 2 matrix.

**Solution:**

$A^2 = \begin{bmatrix} 1 & 3 \\ 3 & 4 \end{bmatrix} \times \begin{bmatrix} 1 & 3 \\ 3 & 4 \end{bmatrix}$

$A^2 = \begin{bmatrix} 10 & 15 \\ 15 & 25 \end{bmatrix}$

$B^2 = \begin{bmatrix} -2 & 1 \\ -3 & 2 \end{bmatrix} \times \begin{bmatrix} -2 & 1 \\ -3 & 2 \end{bmatrix}$

$B^2 = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$

$5B^2 = \begin{bmatrix} 5 & 0 \\ 0 & 5 \end{bmatrix}$

$5C = A^2 - 5B^2$

$5C = \begin{bmatrix} 10 & 15 \\ 15 & 25 \end{bmatrix} - \begin{bmatrix} 5 & 0 \\ 0 & 5 \end{bmatrix}$

$5C = \begin{bmatrix} 5 & 15 \\ 15 & 20 \end{bmatrix}$

$C = \begin{bmatrix} 1 & 3 \\ 3 & 4 \end{bmatrix}$