Assignment 2

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Download all python codes from

https://github.com/Adarsh541/EE3900/blob/main/Assignment2/codes/Assignment2.py

Download latex-tikz codes from

https://github.com/Adarsh541/EE3900/blob/main/Assignment2/Assignment2.tex

1 Problem(Matrices Q2.18)

If, $\mathbf{A}^\top = \begin{pmatrix} -2 & 3 \\ 1 & 2 \end{pmatrix}$ and $\mathbf{B} = \begin{pmatrix} -1 & 0 \\ 1 & 2 \end{pmatrix}$ then find the value $(\mathbf{A} + \mathbf{2B})^\top$

2 Solution

Given,

$$\mathbf{A}^\top = \begin{pmatrix} -2 & 3 \\ 1 & 2 \end{pmatrix} \tag{2.0.1}$$

and

$$\mathbf{B} = \begin{pmatrix} -1 & 0 \\ 1 & 2 \end{pmatrix} \tag{2.0.2}$$

$$\implies \mathbf{B}^\top = \begin{pmatrix} -1 & 1 \\ 0 & 2 \end{pmatrix} \tag{2.0.3}$$

$$(\mathbf{A} + \mathbf{2B})^\top = \mathbf{A}^\top + 2\mathbf{B}^\top \tag{2.0.4}$$

$$= \begin{pmatrix} -2 & 3 \\ 1 & 2 \end{pmatrix} + 2\begin{pmatrix} -1 & 1 \\ 0 & 2 \end{pmatrix} \tag{2.0.5}$$

$$= \begin{pmatrix} (-2) + 2(-1) & (3) + 2(1) \\ (1) + 2(0) & (2) + 2(2) \end{pmatrix} \tag{2.0.6}$$

$$= \begin{pmatrix} -4 & 5 \\ 1 & 6 \end{pmatrix} \tag{2.0.7}$$