

Problem 1

Let $B = \begin{bmatrix} 1 & 3 & 5 \\ 0 & 2 & 1 \\ -2 & 4 & 1 \end{bmatrix}$. Is B a symmetric matrix? What about BB^T ?

Problem 2

Show that for square matrix $(A^2)^T = (A^T)^2$.

Problem 3

Show that if A and B are both $n \times n$ upper triangular matrices, then AB is also an upper triangular matrix.