Assignment 6

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and latex-tikz codes from

https://github.com/kavya309/ASSIGNMNT 6/main.tex

1 Question No.2.48

If the matrix A is both symmetric and skew symmetric ,then

A) A is diagonal matrix
B) A is zero matrix
C) A is square matrix
D) None of these

2 SOLUTION

If a matrix A is symmetric ,then

$$\mathbf{A}^T = \mathbf{A} \tag{2.0.1}$$

If matrix A is skew symmetric ,then

$$\mathbf{A}^T = -\mathbf{A} \tag{2.0.2}$$

From equations (2.0.1) and (2.0.2) ,

$$A = -A \tag{2.0.3}$$
$$2A = 0 \tag{2.0.4}$$
$$A = 0 \tag{2.0.5}$$

$\therefore$ A is zero matrix