Exercises from Strang Page 8 2,3,5-9,12,13,28,31; Page 20 4,5,16,18,19,22,29,31;

Additional Problems

1. Consider the vectors

$$\vec{v} = \begin{bmatrix} 1 \\ 2 \\ 4 \end{bmatrix} \text{ and } \vec{w} = \begin{bmatrix} 3 \\ -5 \\ 7 \end{bmatrix}$$

Compute the inner product $\vec{v}^T\vec{w}$ and the outer product $\vec{v}\vec{w}^T$. Is the outer product commutative? How are $\vec{v}\vec{w}^T$ and $\vec{w}\vec{v}^T$ related?