



## **Problem**

What is the dimension of the space of all upper triangular  $n \times n$  matrices?



## **Problem**

Find a basis of the space of all  $2 \times 2$  matrices S such that

$$\begin{pmatrix} 1 & 1 \\ 1 & 1 \end{pmatrix} S = S \begin{pmatrix} 2 & 0 \\ 0 & 0 \end{pmatrix}$$