

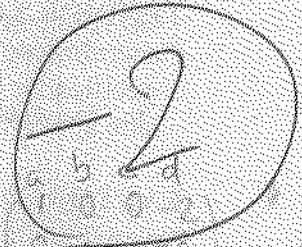
$$H_2 = \left\{ \begin{pmatrix} a & b \\ c & d \end{pmatrix} \mid 2a-b-d=0, 2a-d=b \right\} \quad H_1 = \left\{ \begin{pmatrix} a & 2a-d \\ c & d \end{pmatrix} \right\}$$

$$B_{H_1} = \left\{ \begin{pmatrix} 1 & 2 \\ 0 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 0 \\ 1 & 0 \end{pmatrix}, \begin{pmatrix} 0 & -1 \\ 0 & 1 \end{pmatrix} \right\} \quad \dim H_1 = 3$$

$$H_2 = \left\{ a \begin{pmatrix} 1 & 2 \\ 0 & 0 \end{pmatrix} + b \begin{pmatrix} 0 & 1 \\ 0 & 1 \end{pmatrix} \right\} = \left\{ \begin{pmatrix} a & 2a+b \\ 0 & b \end{pmatrix} \right\}, \quad B_{H_2} = \left\{ \begin{pmatrix} 1 & 2 \\ 0 & 1 \end{pmatrix}, \begin{pmatrix} 0 & 1 \\ 0 & 1 \end{pmatrix} \right\}$$

$$H_3 = \left\{ \begin{pmatrix} a & b \\ c & d \end{pmatrix} \mid \begin{matrix} a-c-d \\ b-3d \end{matrix} \right\} \quad H_3 = \left\{ \begin{pmatrix} a & b \\ c & d \end{pmatrix} \mid \begin{matrix} c=a-d \\ d=b-3a \end{matrix} \right\} \quad \dim H_3 = 2$$

$$\begin{pmatrix} 1 & 0 & 0 & 0 \\ 2 & -1 & 0 & -1 \\ 0 & 0 & 1 & 0 \\ 1 & -1 & 0 & 1 \end{pmatrix} \xrightarrow{R_2 - 2R_1, R_4 - R_1} \begin{pmatrix} 1 & -1 & 0 & 1 \\ 0 & 1 & 0 & -2 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix} \xrightarrow{R_1 + R_2} \begin{pmatrix} 1 & 0 & 0 & -1 \\ 0 & 1 & 0 & -2 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix}$$



$$H_2 \cap H_3 = \left\{ \begin{pmatrix} 2d & 3d \\ c & d \end{pmatrix} \right\} \quad \begin{matrix} a=2d \\ b=3d \end{matrix}$$

$$B_{H_2 \cap H_3} = \left\{ \begin{pmatrix} 2 & 3 \\ 0 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 1 \\ 1 & 0 \end{pmatrix} \right\} \quad \dim H_2 \cap H_3 = 2$$

$$\dim H_2 = 2, \quad B = \begin{pmatrix} 2 & 1 \\ 0 & -2 \end{pmatrix} \quad \text{no existe } H_1 \cup H_3 = H_2 \subseteq H_1 = \mathbb{R}^{2 \times 2}$$

$$H_1 \cup H_3 = \begin{pmatrix} 1 & 2 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & -1 & 0 & 1 \\ 0 & 0 & 0 & -1 \end{pmatrix}$$

Porque  $H_2 \subseteq H_1$ ,  
 xq' no anulada  $H_3$

\* Por lo tanto  $A+B$  no está anulada

$$\begin{pmatrix} 1 & 2 & 0 & 0 \\ 0 & -1 & 0 & 1 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & -1 \end{pmatrix} \xrightarrow{R_2 \times (-1)} \begin{pmatrix} 1 & 2 & 0 & 0 \\ 0 & 1 & 0 & -1 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & -1 \end{pmatrix}$$

$$\begin{pmatrix} 1 & 2 & 0 & 0 \\ 0 & 1 & 0 & -1 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & -1 \end{pmatrix} \xrightarrow{R_1 - 2R_2} \begin{pmatrix} 1 & 0 & 0 & 2 \\ 0 & 1 & 0 & -1 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & -1 \end{pmatrix} \quad \begin{matrix} H_1 \\ H_3 \end{matrix}$$