$H_1 = \left\{ \begin{pmatrix} a & b \\ c & d \end{pmatrix} \middle/ \begin{matrix} 2a-b-d=0 \\ 2a-d=b \end{matrix} \right\}$ $H_1 = \left\{ \begin{pmatrix} a & 2a-d \\ c & d \end{pmatrix} \right\}$

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

$H_3 = \left\{ a \begin{pmatrix} 1 & 0 \\ 0 & -1 \end{pmatrix} + b \begin{pmatrix} 0 & 1 \\ 0 & 1 \end{pmatrix} \right\} = \left\{ \begin{pmatrix} a & b \\ 0 & -a+b \end{pmatrix} \right\}$ $B_{H_3} = \left\{ \begin{pmatrix} 1 & 0 \\ 0 & -1 \end{pmatrix}, \begin{pmatrix} 0 & 1 \\ 0 & 1 \end{pmatrix} \right\}$ ✓

$H_3 = \left\{ \begin{pmatrix} a & b \\ c & d \end{pmatrix} \middle/ c=0 \wedge d=-a+b \right\}$ $\dim H_3 = 2$

$d+a-b=0$

$H_1 \cap H_3 = \left\{ \begin{pmatrix} a & b \\ c & d \end{pmatrix} \middle/ \begin{matrix} a=2d \\ b=3d \end{matrix} \right\}$

$c=0$

$$\begin{array}{cccc} a & b & c & d \end{array}$$

$$\begin{pmatrix} 2 & -1 & 0 & -1 \\ 0 & 0 & 1 & 0 \\ 1 & -1 & 0 & 1 \end{pmatrix} \sim \begin{pmatrix} 1 & -1 & 0 & 1 \\ 2 & -1 & 0 & -1 \\ 0 & 0 & 1 & 0 \end{pmatrix} \sim \begin{pmatrix} 1 & -1 & 0 & 1 \\ 0 & 1 & 0 & -3 \\ 0 & 0 & 0 & 0 \end{pmatrix} \sim \begin{pmatrix} 1 & 0 & 0 & -2 \\ 0 & 1 & 0 & -3 \\ 0 & 0 & 0 & 0 \end{pmatrix}$$

-2

$a=2d$
$b=3d$

$H_1 \cap H_3 = \begin{pmatrix} 2d & 3d \\ c & d \end{pmatrix}$

$B_{H_1 \cap H_3} = \left\{ \begin{pmatrix} 2 & 3 \\ 0 & 1 \end{pmatrix}, \begin{pmatrix} 0 & 0 \\ 1 & 0 \end{pmatrix} \right\}$ $\dim H_1 \cap H_3 = 2$

A

c) Sean $A = \begin{pmatrix} 2 & 1 \\ 2 & 1 \end{pmatrix}$ y $B = \begin{pmatrix} 3 & 1 \\ 0 & -2 \end{pmatrix}$ NO EXISTE

$H_1 \cup H_3 = H_3 \subseteq H_1 =$??

$H_1 \cup H_3 =$

Porque $H_3 \subseteq H_1$ R/

xq' no [illegible] H_3.

* Por lo tanto $A+B$ no [illegible]

$$\begin{pmatrix} 1 & 2 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & -1 & 0 & 1 \\ 1 & 0 & 0 & -1 \\ 1 & 1 & 0 & 0 \end{pmatrix} \sim \begin{pmatrix} 1 & 2 & 0 & 0 \\ 0 & -1 & 0 & 1 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \\ 0 & -1 & 0 & 0 \end{pmatrix} \sim \begin{pmatrix} 1 & 2 & 0 & 0 \\ 0 & 1 & 0 & -1 \\ 0 & 0 & 1 & 0 \\ 0 & -1 & 0 & 0 \\ 0 & 0 & 0 & -1 \end{pmatrix}$$

$$\begin{pmatrix} 1 & 2 & 0 & 0 \\ 0 & 1 & 0 & -1 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & -1 \\ 0 & 0 & 0 & -1 \end{pmatrix} \sim \begin{pmatrix} 1 & 2 & 0 & 0 \\ 0 & 1 & 0 & -1 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \\ \cancel{0} & \cancel{0} & \cancel{0} & \cancel{0} \end{pmatrix} \begin{matrix} H_1 \\ \\ \\ H_3 \end{matrix}$$