

Picture

$$A\vec{x} = \vec{b}$$

$$\vec{b} = \vec{0}$$

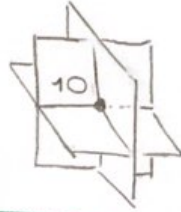
$$\vec{b} \neq \vec{0}$$

$$A \text{ } m \times n$$

Columns A

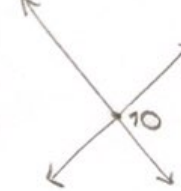
lin.

ind. \Leftrightarrow



3x3

1 solution



2x2



3x2

1 solution



2x3

∞ solutions



2x3



∞ solutions

3x3 (det=0)



3x3 (det=0)

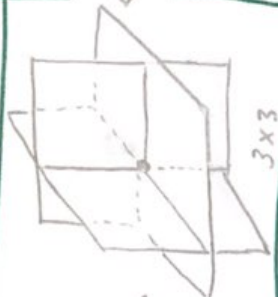
0 solutions

3x2



3x3

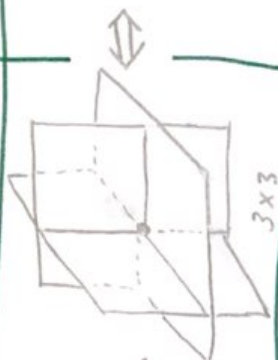
∞ solutions



3x3



1 solution



3x3

Rows lin. indep. ($m=n$)

Rows lin. dep. $m > n$

Rows lin. indep. $m < n$

Rows lin. dep.