

not all zero, such that
 $C_1V_1 + C_2V_2 + \dots + C_RV_R = 0$.

Otherwise it is called linearly independent

Rem. a) In \mathbb{R}^2 , u and v are linearly dependent if $u = cv$ for some c .

Thm. V_1, \dots, V_m are linearly ~~in~~dependent if at least one of the vectors can be expressed as a linear combination of the others.

ex. (a) $\begin{bmatrix} 1 \\ 4 \end{bmatrix}$ and $\begin{bmatrix} -1 \\ 2 \end{bmatrix}$ are lin indep.