start with a collection of vectors $S = \{\mathbf{v}_1, \ldots, \mathbf{v}_p\}$ in $\mathbb{R}^m$

(that's p vectors with m components each)

Does S contain $\mathbf{0}$ (the zero vector)?

yes

no

Are there more vectors than components of each vector (i.e. is $p > m$)?

yes

no

Is any one vector of S a scalar multiple of any other?

yes

no/I don't know

Is any one vector of S a linear combination of any other?

yes

no/I don't know

Can you visualize span$\{\mathbf{v}_1, \ldots, \mathbf{v}_p\}$?

no

yes

Is the dimension of span$\{\mathbf{v}_1, \ldots, \mathbf{v}_p\}$ equal to p (the number of vectors)?

yes

no

I don't know

Does $\mathsf{A}\mathbf{x} = \mathbf{0}$ have nontrivial solutions?

(A is the matrix $\left(\mathbf{v}_1 \mid \cdots \mid \mathbf{v}_p\right)$ having columns $\mathbf{v}_1, \ldots, \mathbf{v}_p$)

no

yes

$\{\mathbf{v}_1, \ldots, \mathbf{v}_p\}$ are linearly independent

$\{\mathbf{v}_1, \ldots, \mathbf{v}_p\}$ are linearly dependent