

Source: [\[KBe20math530refVectorSpace\]](#)

## 1 | Overview

### Intuition

- If you have a vector list  $v$  that is a linear combination of vectors in  $V$ , or equivalently,

$$v = a_1 v_1 + \dots + a_m v_m \text{ where } v_1, \dots, v_m \in V$$

- And those choices of  $a_1, \dots, a_m$  are unique, then this is a linear independence? ## #definition linearly independent > - The empty list  $()$  is linearly independent > - A list  $v_1, \dots, v_m$  of vectors in  $V$  is called **linearly independent** if the only choice of  $a_1, \dots, a_m \in F$  that makes  $a_1 v_1 + \dots + a_m v_m$  equal 0 is  $a_1 = \dots = a_m = 0$
- ^^ what the heck is that last part #todo-exr0n