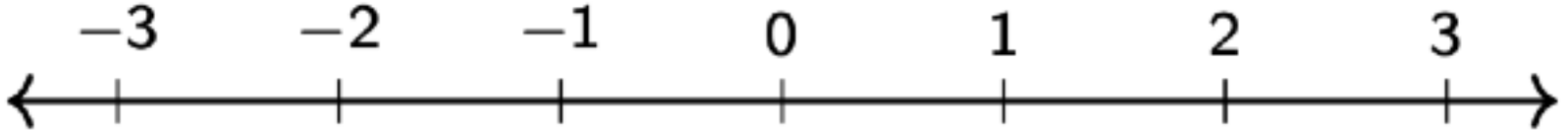


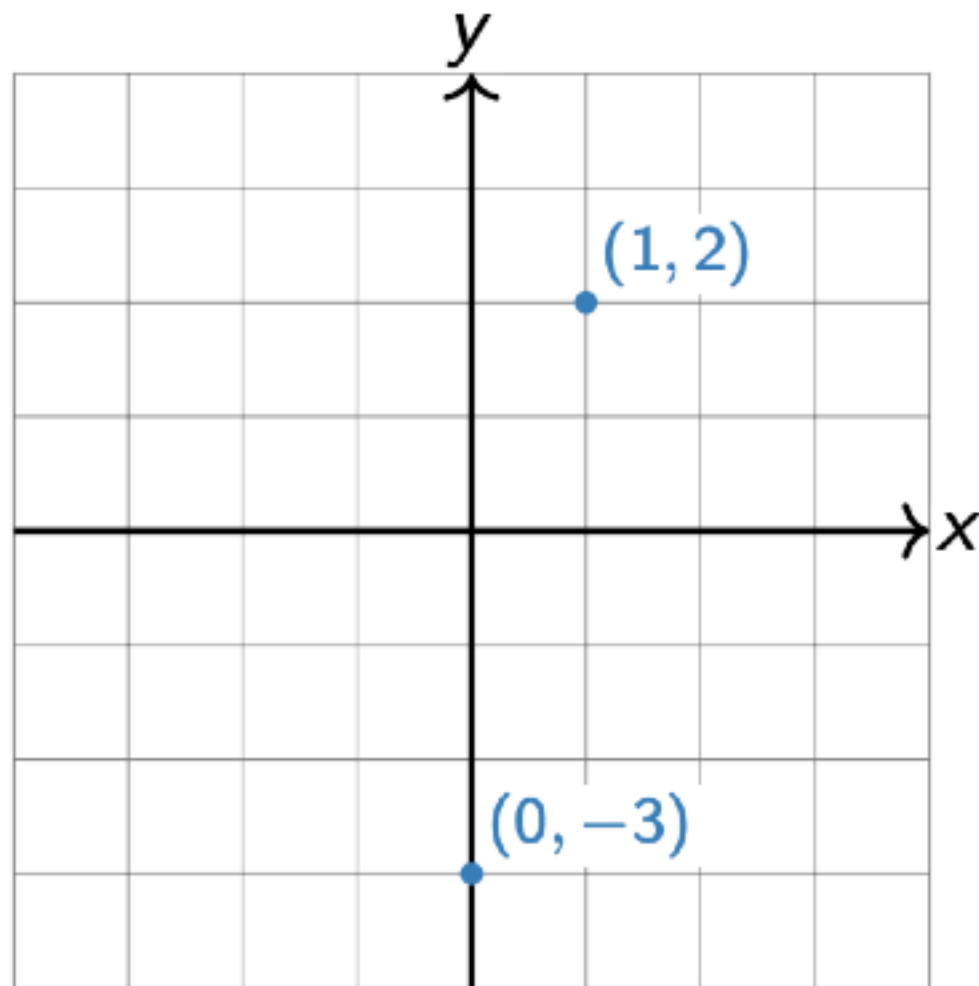
websites

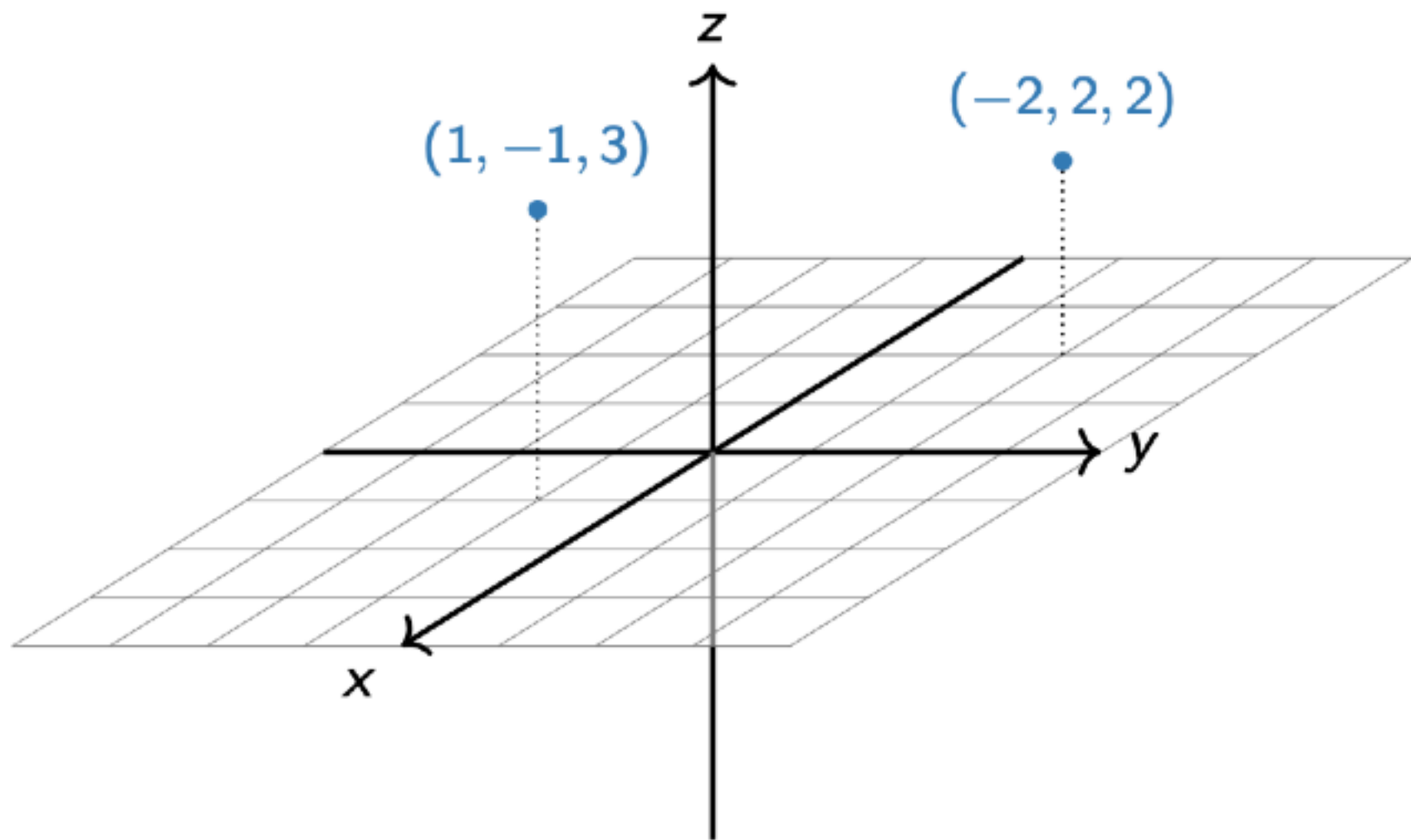
components

components

dimension







magnitude

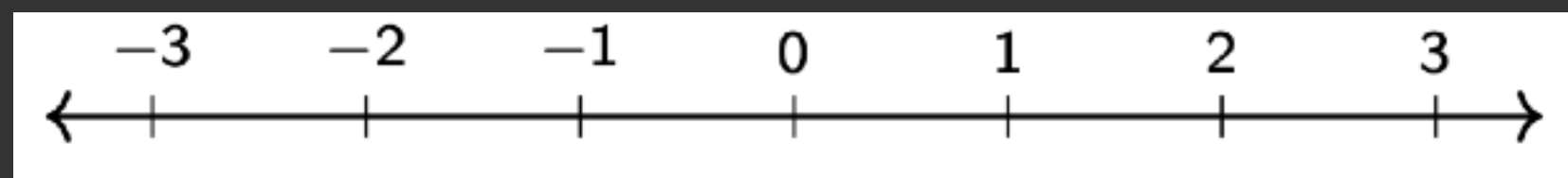
direction

vectors

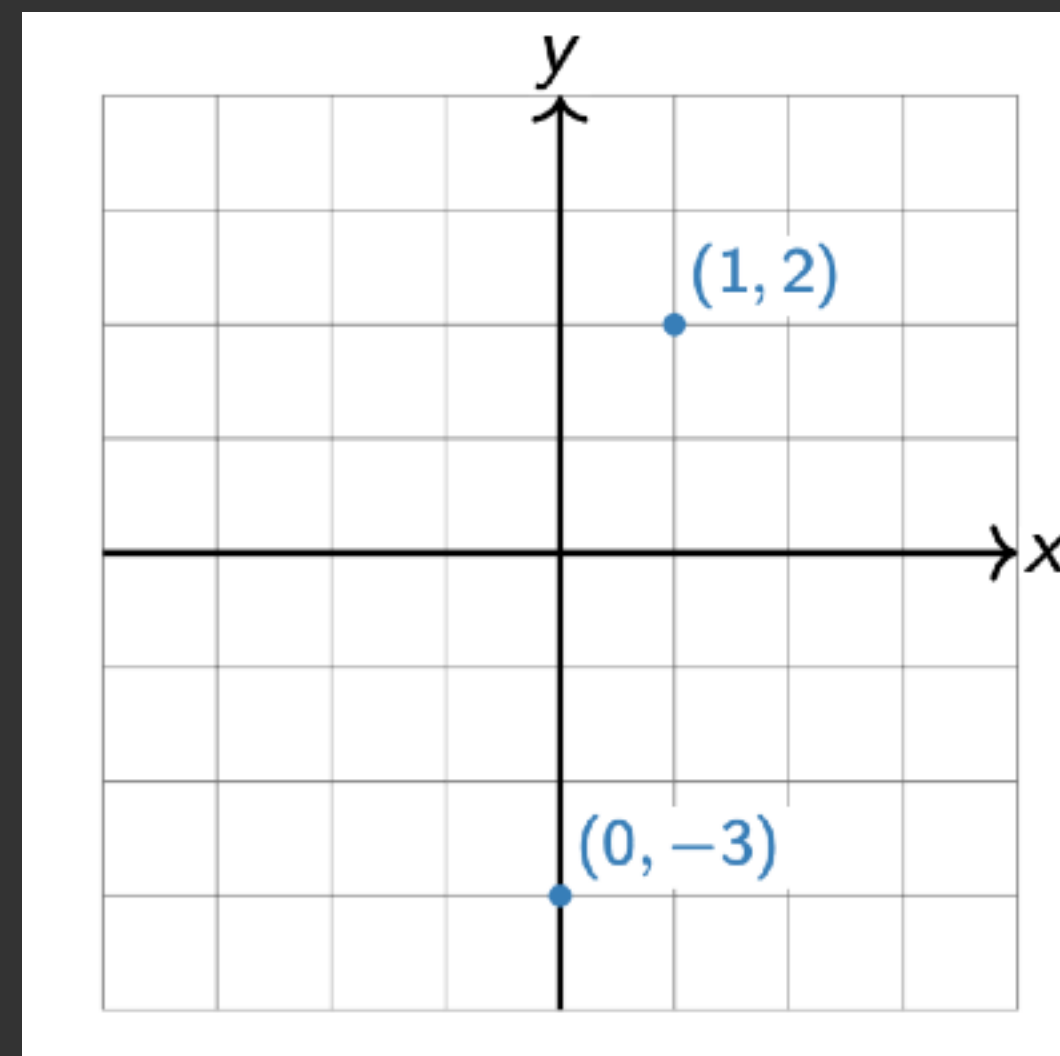
- a list of numbers or an object that has both a magnitude and a direction
- **components**: the entries of a vector
- the **dimension** of a vector is the number of components in the vector.
- notation: bold face ($\mathbf{x}, \mathbf{y}, \mathbf{z}$) or arrow over ($\vec{x}, \vec{y}, \vec{z}$)
- intuitively: Let n be a positive whole number. We define

$\mathbb{R}^n =$ all ordered n -tuples of real numbers $(x_1, x_2, x_3, \dots, x_n)$

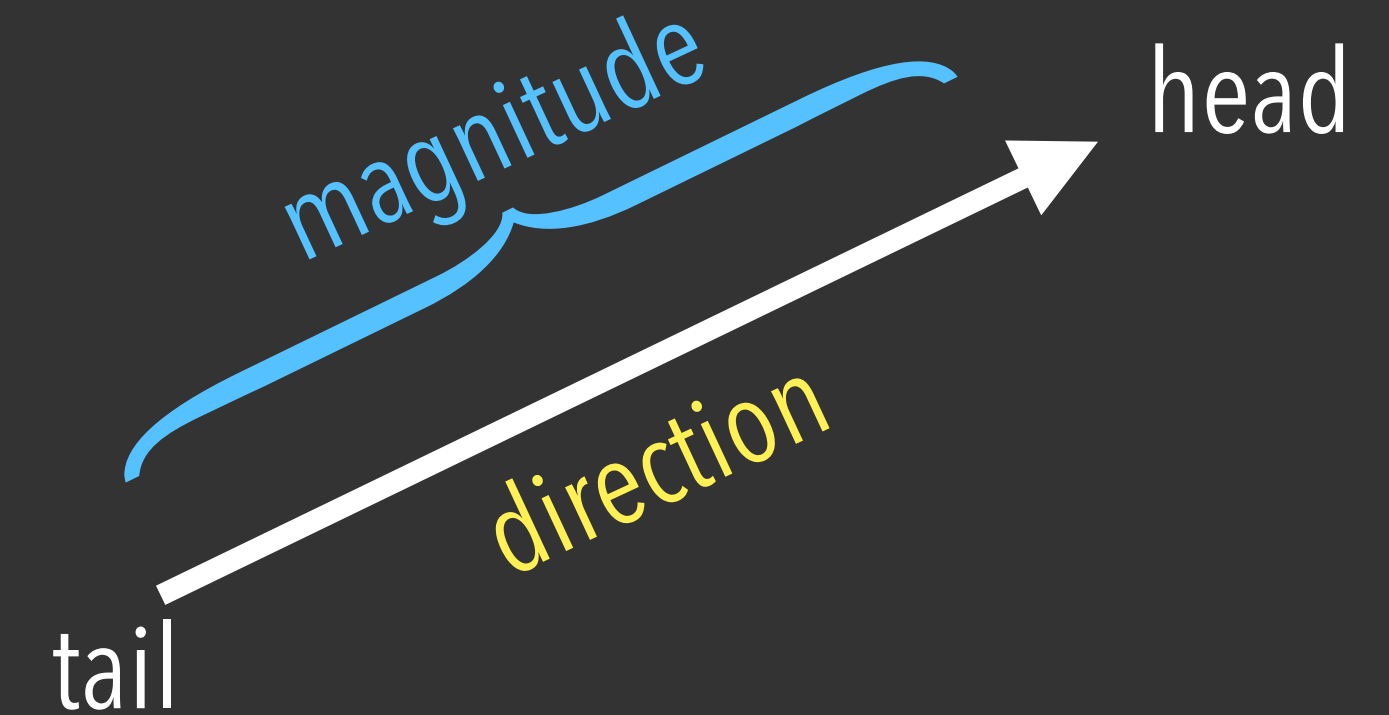
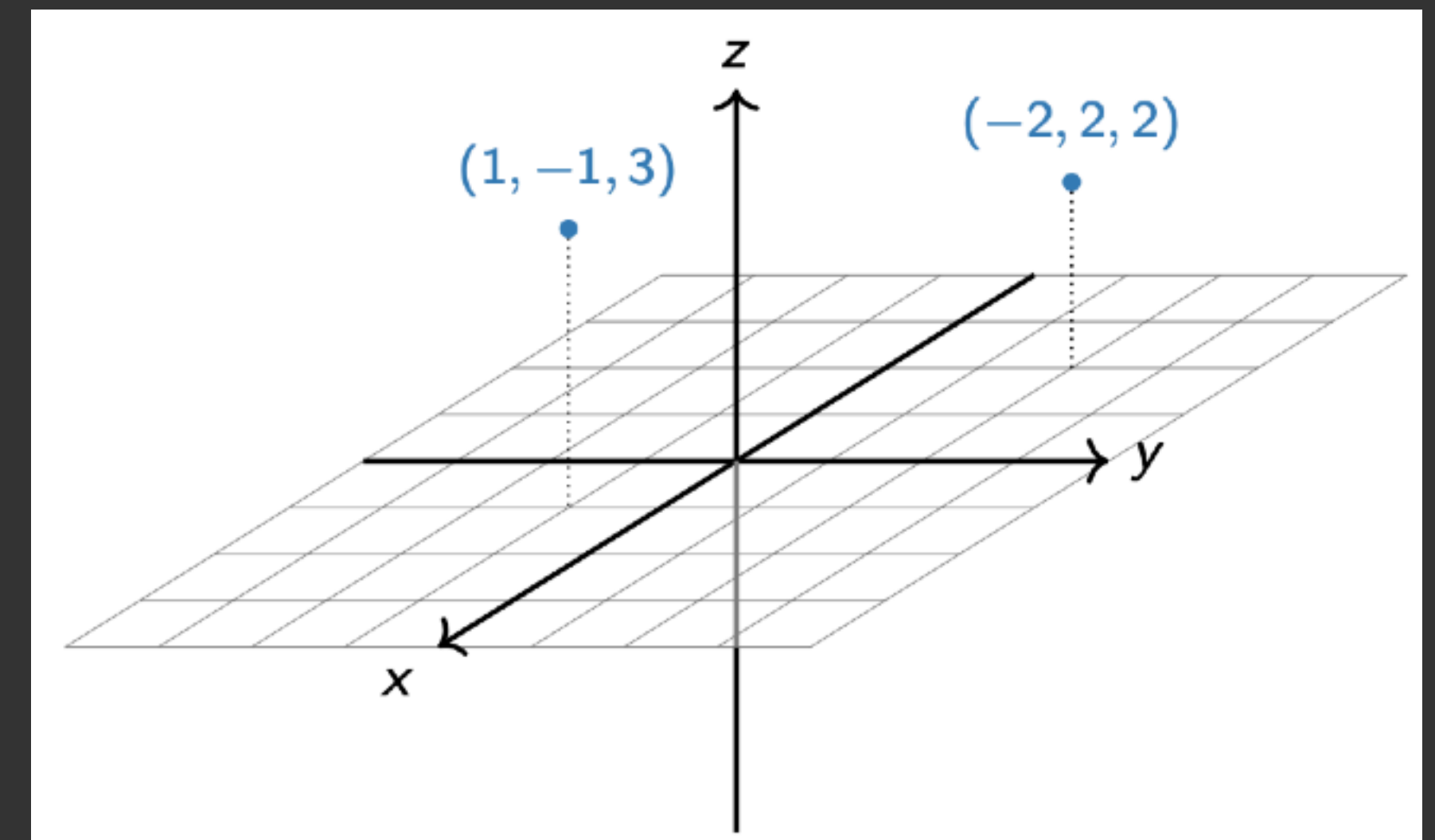
$n = 1$



$n = 2$



$n = 3$



magnitudes and direction

