



scalars



magnitude direction





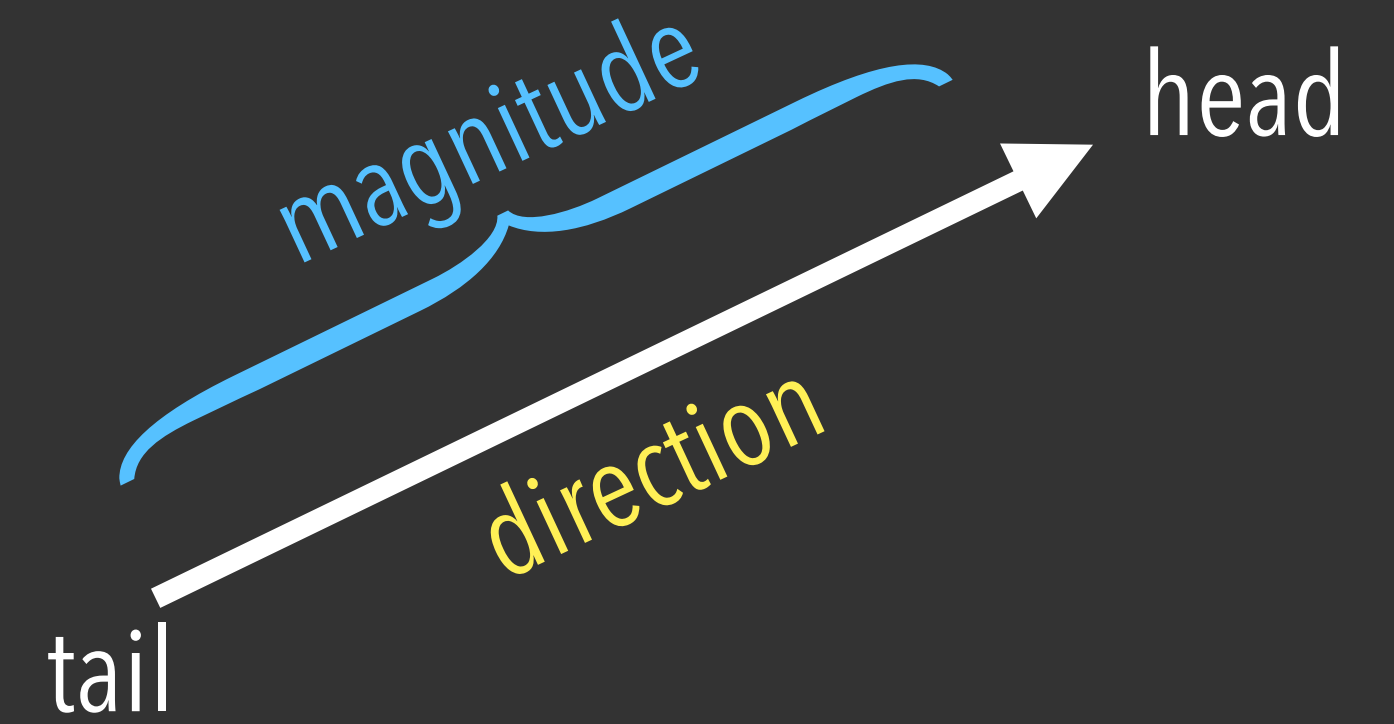


# scalars

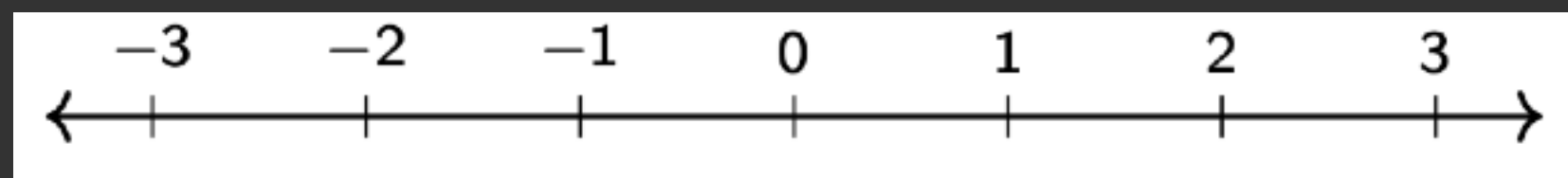
- any single element of some set, for example elements of the real numbers  $\mathbb{R}$
- all quantities that have a **magnitude** but no **direction**, other than perhaps positive or negative
- scalars are easy to use: treat them as normal numbers
- examples of scalars are temperature, distance, speed, or mass
- notation: lowercase letters (can be both Latin and Greek)



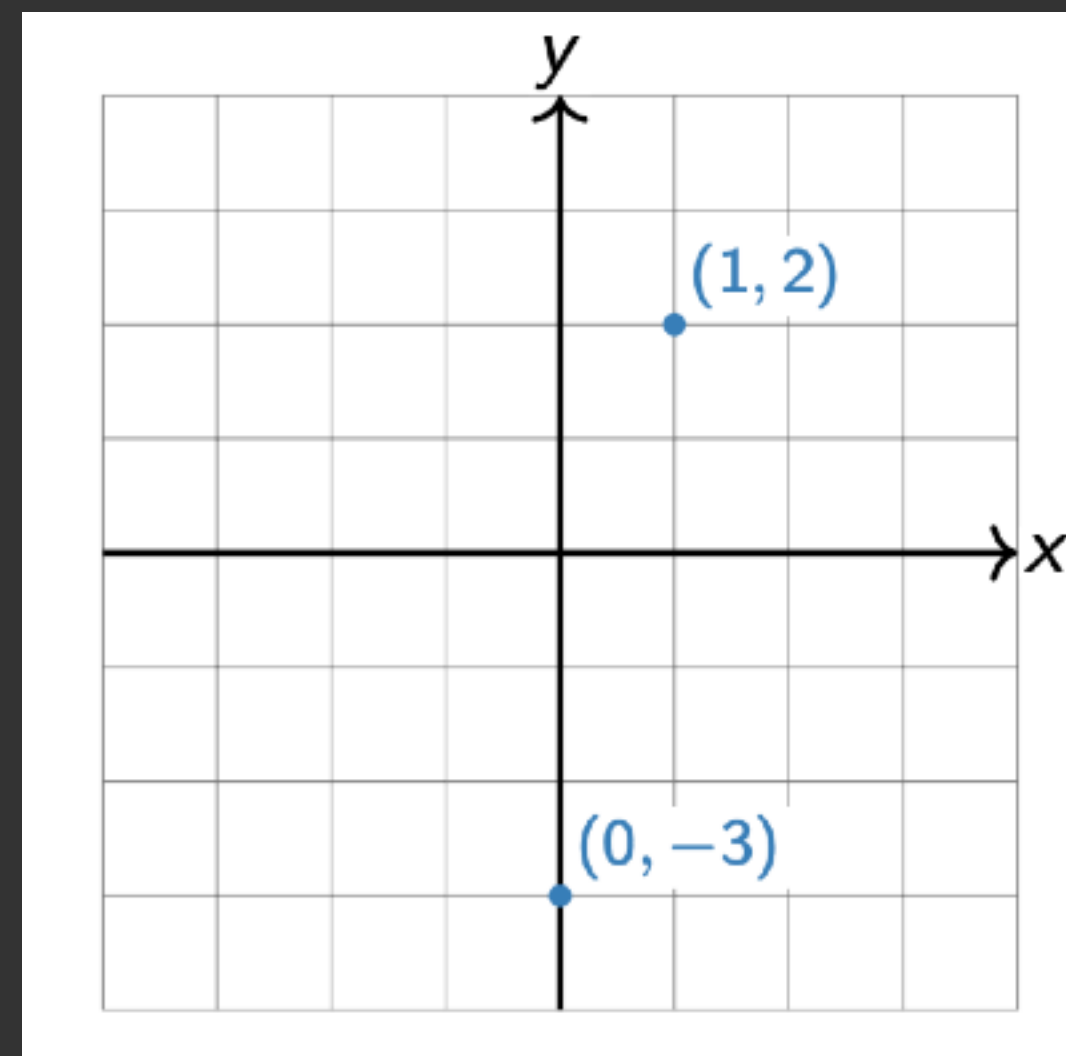
# vectors



$n = 1$



$n = 2$



$n = 3$

