3 central tendency

- Mean, Median and Mode
  - ↳ Simple average

μ (population)

$\bar{x}$ (sample)

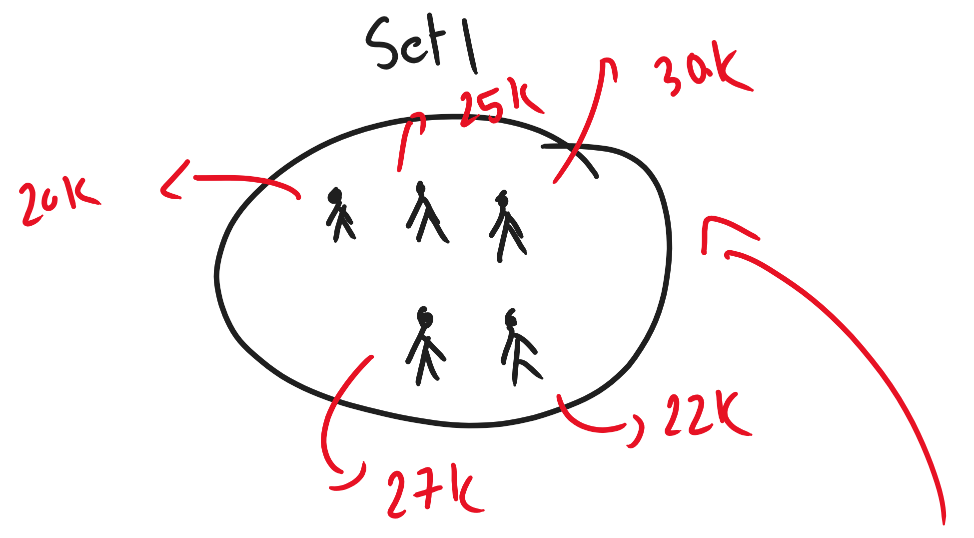
$$\frac{\sum_{i=1}^{N} x_i}{N} = \frac{x_1 + x_2 + x_3 + x_4 + x_5 - - - - + x_{10}}{N} \quad N = 10$$

N ⟶ 10

= Mean / Average

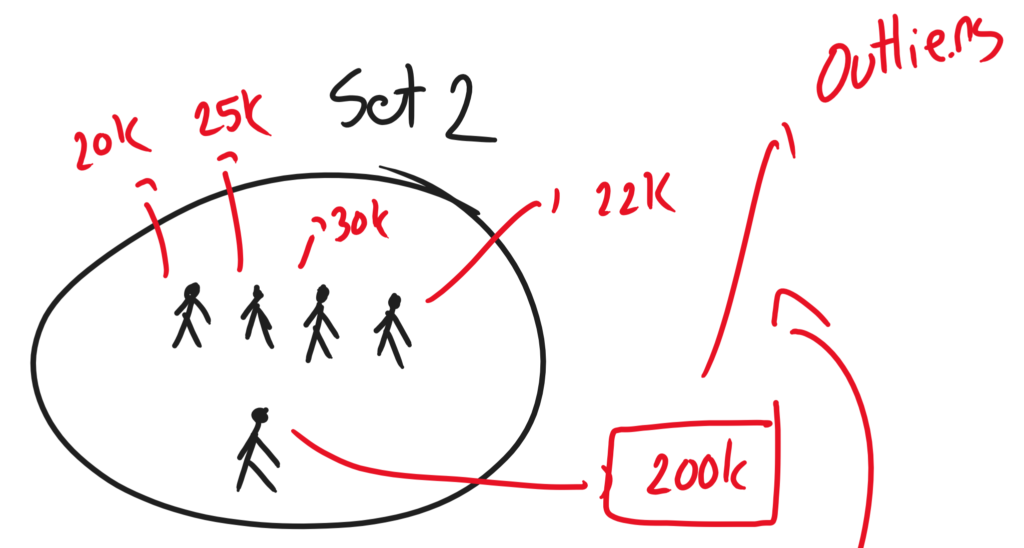
- Most common central tendency
- It is heavily affected by outliers

Set 1



$$\frac{20 + 25 + 30 + 27 + 22}{5} = 24.8k$$

Set 2



$$\frac{20 + 25 + 30 + 22 + 200}{5} = 59.4K$$

Median

Ordered set [illegible] [illegible] [illegible] middle number

Dataset 1 = { 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 } ⟶ without outliers

Dataset 2 = { 1, 2, 3, 4, 5, 15, 25, 35, 45, 55 } ⟶ with outliers

Mean : 5.5

Mean : 21

even = $\frac{5+6}{2}$ = 5.5

even = $\frac{5+15}{2} = \frac{20}{2} = 10$ (median)

odd = middle value ⟶ {1, 2, 3, 4, 5, 6, 7, 8, 9} ⟶ 5

Mode

↳ highest number of a value occurring

{1, 2, 3, 3, 3, 4, 5, 6}

↳ 3 ⟶ mode ⟶ categorical / numerical

{ 1, 2, 3, 4, 5, 6 }

↳ mode? 6 mode ⟶ max 2-3 mode