Mean Estimation and Confidence Intervals

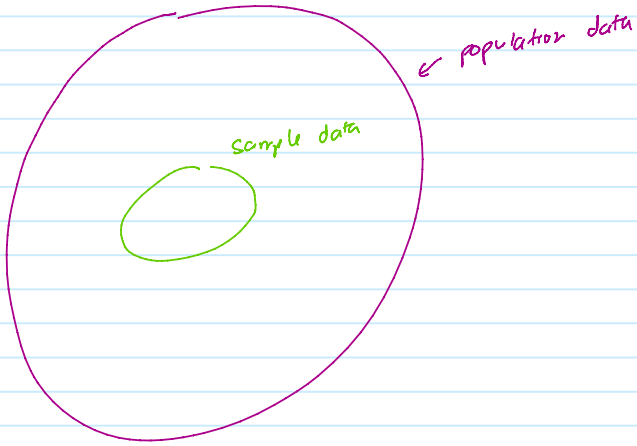
Tuesday, February 21, 2023 1:59 PM

State in sentences Type 1 and Type 2 when test the hypothesis that drinking any amount of alcohol before driving increases crash risk among teen drivers.

H_1 : Drinking increases crash risk.

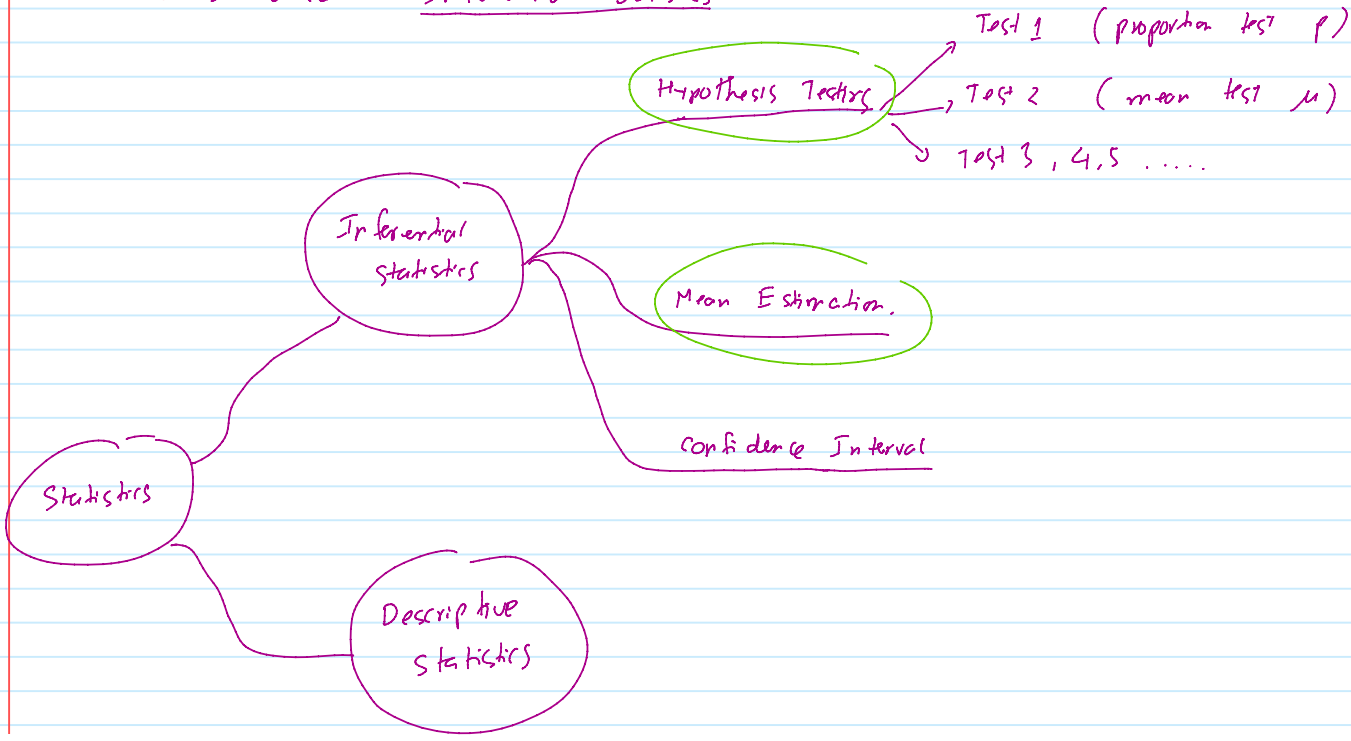
Out come of the test → Type 1 Error : Support H_1 when H_1 is not correct.

→ Type 2 Error : not support H_1 when H_1 is correct



we use a sample data to "talk about" / infer the population data

This is called " Inferential Statistics "



Descriptive statistics

⑧ Mean Estimation

Salary.

0.815615
3.4776
12.30769
3.202217
3.05724
1.312611
0.074159
0.04608
12.01685

Question: what is the best guess for the average of NBA players in 2010?

Guess 1: 3.6 mil

2: 4.2 mil

3: 4.0 mil

4: Sample average = 4.03

This is the best guess of the average NBA Salary in 2010

This is call mean estimation.

The error of this guess / estimation is called the Standard error (SE) or SEM

N	Mean	StDev	SE Mean	95% CI for μ
9	4.03	4.79	1.60	(0.35, 7.72)

0.815615
3.4776
12.30769
3.202217
3.05724
1.312611
0.074159
0.04608
12.01685
1.43575
1.57723
3.70416
3.533333
17.88418

N	Mean	StDev	SE Mean	95% CI for μ
14	4.60	5.43	1.45	(1.47, 7.74)

smaller error

different estimation