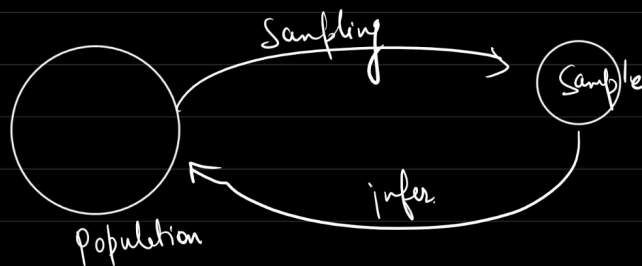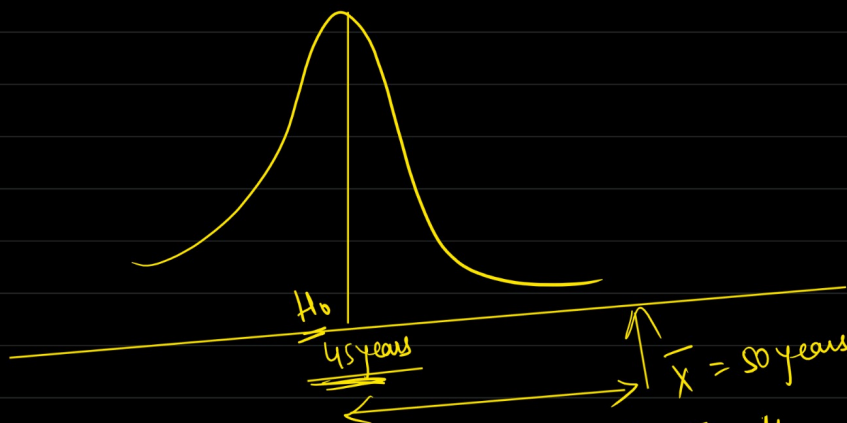## P value

→ The p-value is the probability value, calculated from a statistical test.

→ P value in Hypothesis testing is used to decide whether to reject a null hypothesis or not.

Population   Sampling → Sample   infer.

* Mage of the employee is 45 years (pop.)

→ You took a sample
→ Calculated avg age of that sample ⟶ 50 years.

Ho
45years

$\bar{x} = 50$ years.

$Z score \Rightarrow \dfrac{\bar{x} - M}{\sigma / \sqrt{n}}$ ⟶ Corresponding to this Z score, you will be having prob. value

How far?

Clinical trial of a medicine.

↳ 1000 person

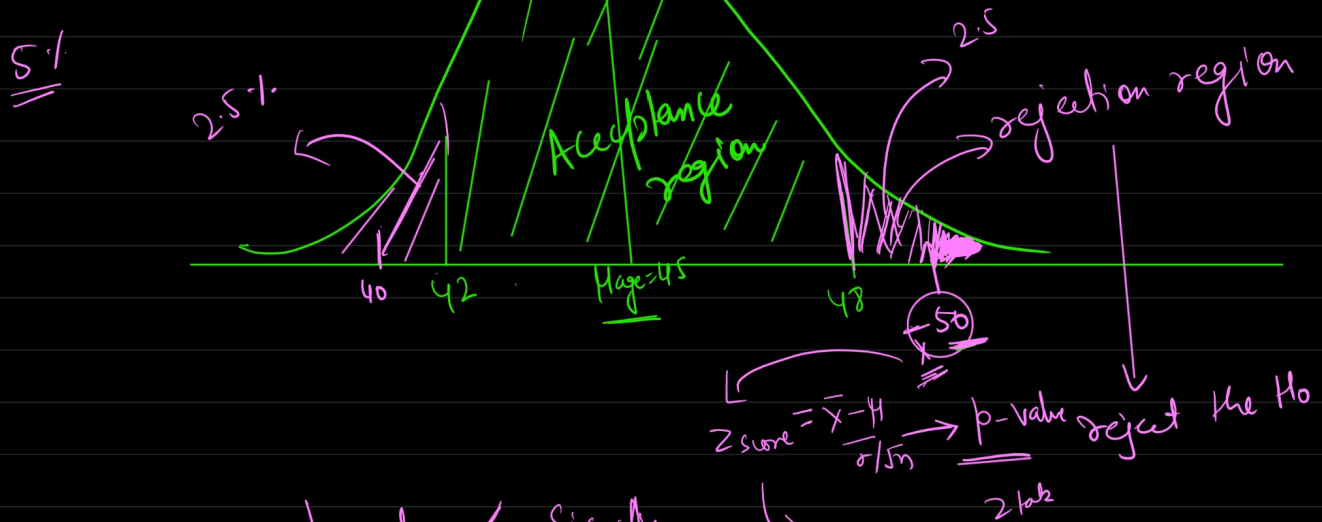↳ 95 → got cured with this medicine.

↳ medicine is working 95%

→ Out of 100 times, 95% will work. ⟶ [95% Confident]

→ 5% of the time medicine doesn't work. — [5% margin of error]

⇓

level of significance

⇓

α.

* Conduct experiment with 5% level of significance

↓

$CI = 1 - 0.05$

$\Rightarrow 0.95$

5%

2.5%

2.5

Acceptance region

rejection region

40   42   Mage=45   48   50

2.5%

$Z score = \dfrac{\bar{X} - \mu}{\sigma/\sqrt{n}} \longrightarrow$ p-value reject the H₀

2 tale

↳ -1.2

p value < Significance value

reject the H₀

else   fail to reject the H₀