Statistics

Lecture 46

Feb 19-8:47 AM

Testing One Population Mean:

$H_0: \mu = \mu_0$	$H_0: \mu \geq \mu_0$	$H_0: \mu \leq \mu_0$
$H_1: \mu \neq \mu_0$	$H_1: \mu < \mu_0$	$H_1: \mu > \mu_0$
TTT	LTT	RTT

Case I: σ Known

CV → z = invNorm

Drawing, labeling, Shading, TI ✓

CTS z

P-Value P

STAT TESTS Z-Test

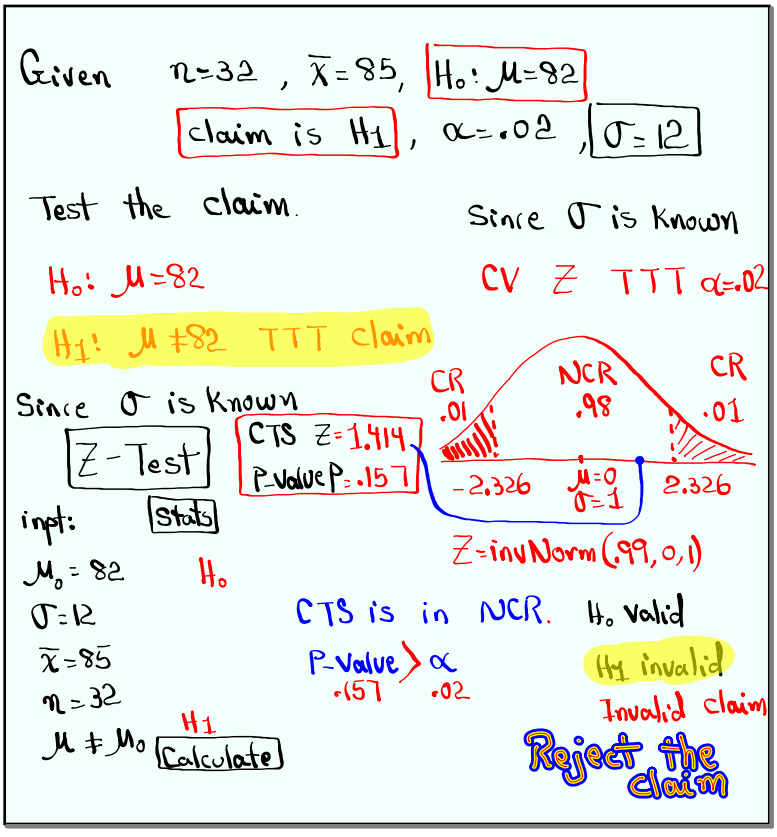
input: Stats

Use Testing chart to determine the validity of H_0 & H_1.

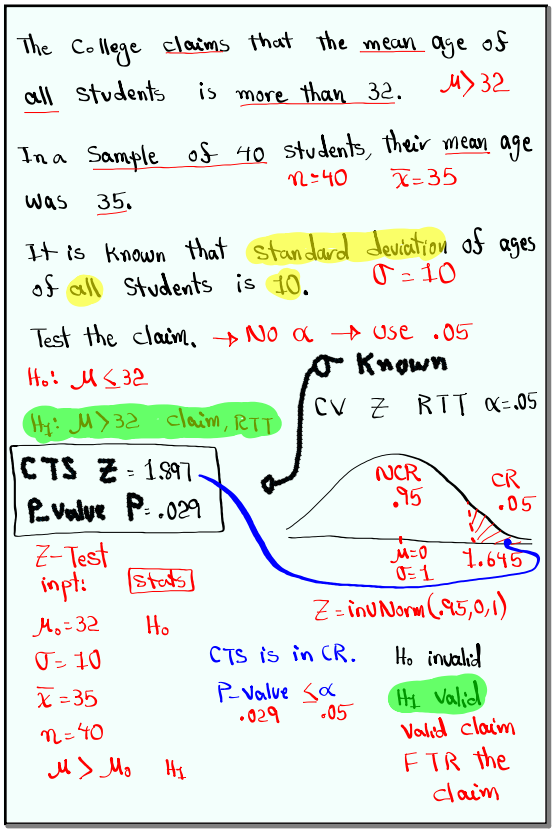
Final Conclusion must be about the claim.

Reject the claim OR FTR the claim

Nov 20-8:56 AM



Nov 21-9:02 AM



Nov 21-9:14 AM

Testing One Population Mean:

$H_0: \mu = \mu_0$	$H_0: \mu \geq \mu_0$	$H_0: \mu \leq \mu_0$
$H_1: \mu \neq \mu_0$	$H_1: \mu < \mu_0$	$H_1: \mu > \mu_0$
TTT	LTT	RTT

Case I: σ Known	Case II: σ Unknown
CV → z = invNorm	CV → t = invT df = n-1
Drawing, labeling, Shading, TI ✓	Drawing, labeling, Shading, TI
CTS z	CTS t
P-value P	P-value P
STAT TESTS Z-Test	STAT TESTS T-Test
inpt: Stats	inpt: Stats

Use Testing chart to determine the validity of H_0 & H_1.

Final Conclusion must be about the claim.
Reject the claim OR FTR the claim

Nov 20-8:56 AM

Given : $n = 15$, $\bar{x} = 70$, $S = 10$, $\alpha = .1$

$H_0: \mu \geq 72$, claim is H_0.

Test the claim.

$H_0: \mu \geq 72$ claim

$H_1: \mu < 72$ LTT

CTS $t = -.775$

P-value $P = .226$

T-Test

inpt: Stats

$\mu_0: 72$ H_0

$\bar{x} = 70$

$S = 10$

$n = 15$

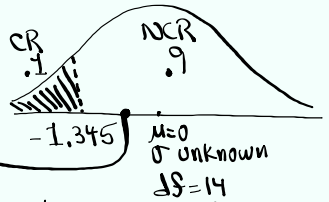
$\mu < \mu_0$ H_1

Calculate

σ Unknown

CV t LTT $\alpha = .1$

$df = n - 1 = 15 - 1 = 14$



$t = invT(.1, 14)$

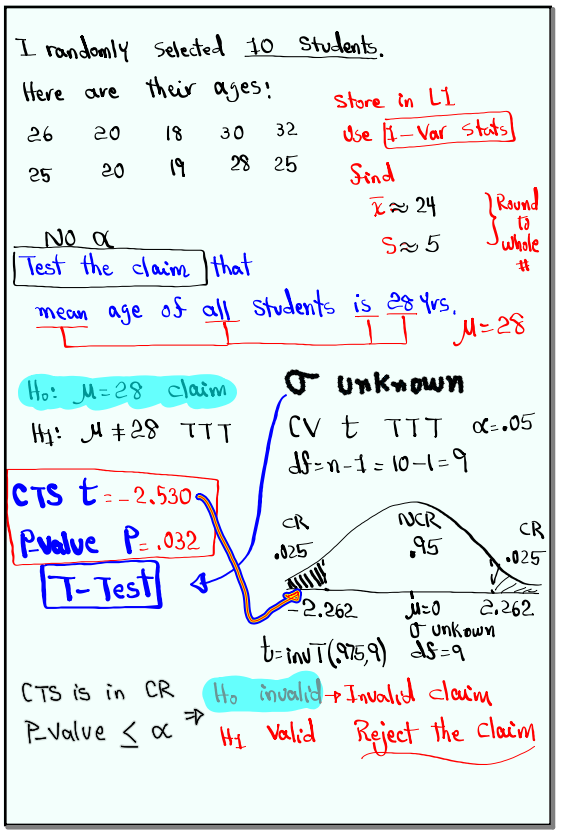
CTS is in NCR. H_0 valid

P-value > α H_1 invalid

valid claim

FTR the claim

Nov 21-9:30 AM


I randomly selected 10 students.
Here are their ages:
26 20 18 30 32
25 20 19 28 25
Store in L1
Use 1-Var Stats
Find
$\bar{x} \approx 24$
$S \approx 5$
Round to whole #
NO α
Test the claim that
mean age of all students is 28 yrs.
$\mu = 28$
H_0: $\mu = 28$ claim
H_1: $\mu \neq 28$ TTT
σ unknown
CV t TTT $\alpha = .05$
$df = n - 1 = 10 - 1 = 9$
CTS $t = -2.530$
Pvalue $P = .032$
T-Test
CR .025
NCR .95
CR .025
-2.262
$\mu = 0$
2.262
σ unknown
$t = invT(.975, 9)$
$df = 9$
CTS is in CR
P-value ≤ α ⇒
H_0 invalid → Invalid claim
H_1 valid
Reject the claim

Nov 21-9:42 AM