Statistics

Lecture 41

Feb 19-8:47 AM

Confidence Interval for population mean μ:

Point-estimate $\bar{x}$

$\bar{x} - E < \mu < \bar{x} + E$

Margin of error E

Case I: σ Known

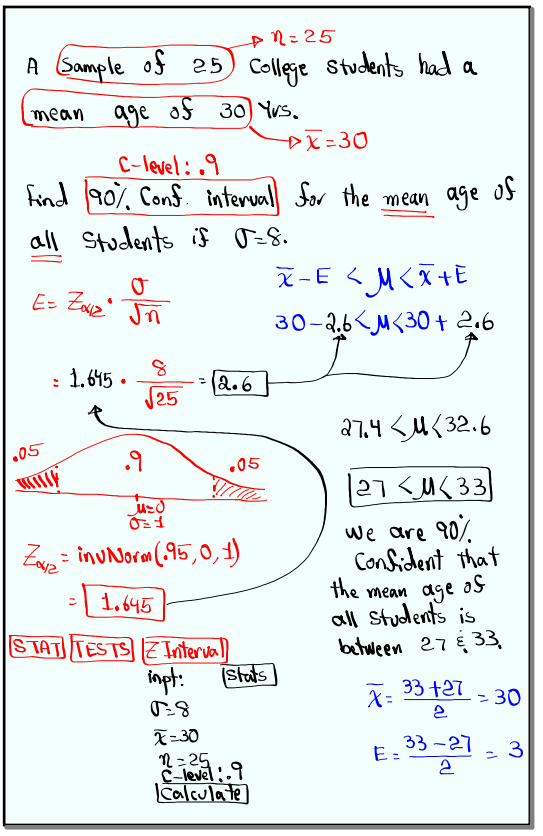
$$E = z_{\alpha/2} \cdot \frac{\sigma}{\sqrt{n}}$$

TI:

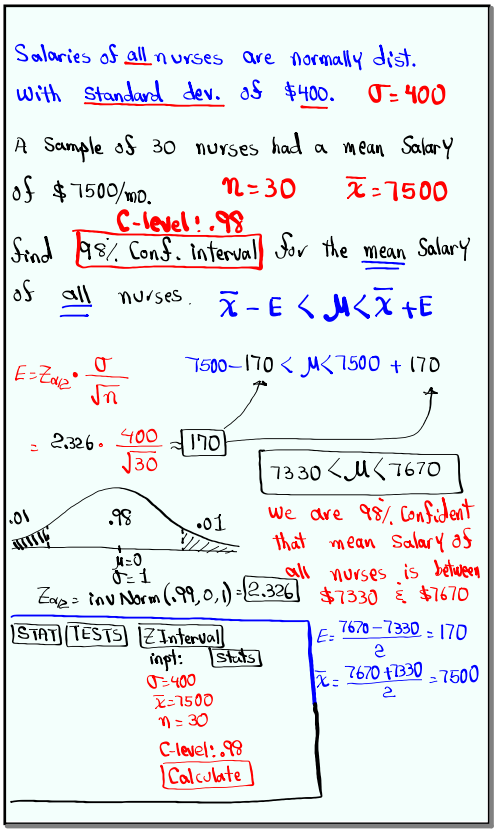
STAT | TESTS | ZInterval

inpt: Stats

Nov 13-8:54 AM



Nov 13-8:57 AM



Nov 13-9:10 AM

$\sigma = 12$

Standard deviation of all exam scores is 12.

A sample of 20 exams had a mean of 88.

$n = 20$ $\quad \bar{x} = 88$

Find confidence interval for the mean of all exams.

No C-level

Use 95%

$82.741 < \mu < 93.259$

Since σ is known, we use [Z Interval]

$83 < \mu < 93$

$E = \frac{93-83}{2} = 5$

$\bar{x} = \frac{93+83}{2} = 88$

Nov 13-9:21 AM

Confidence Interval for population mean μ:

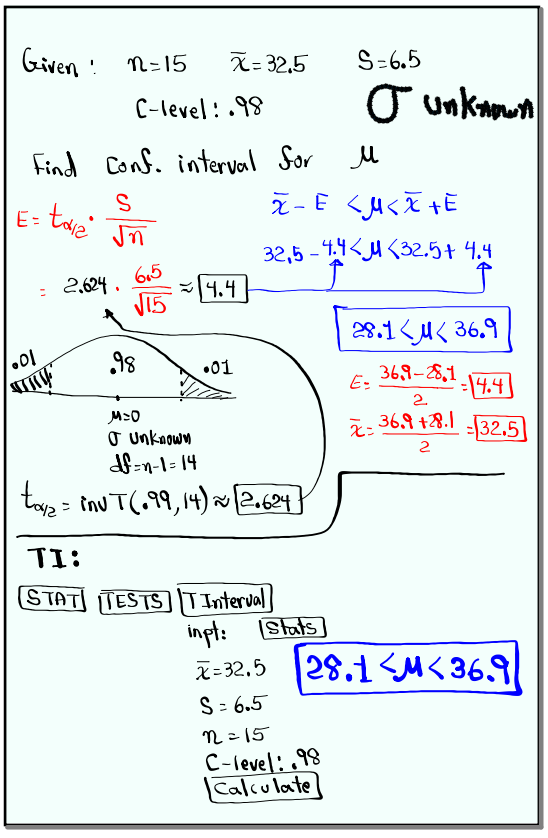
Point-estimate $\bar{x}$

Margin of error E

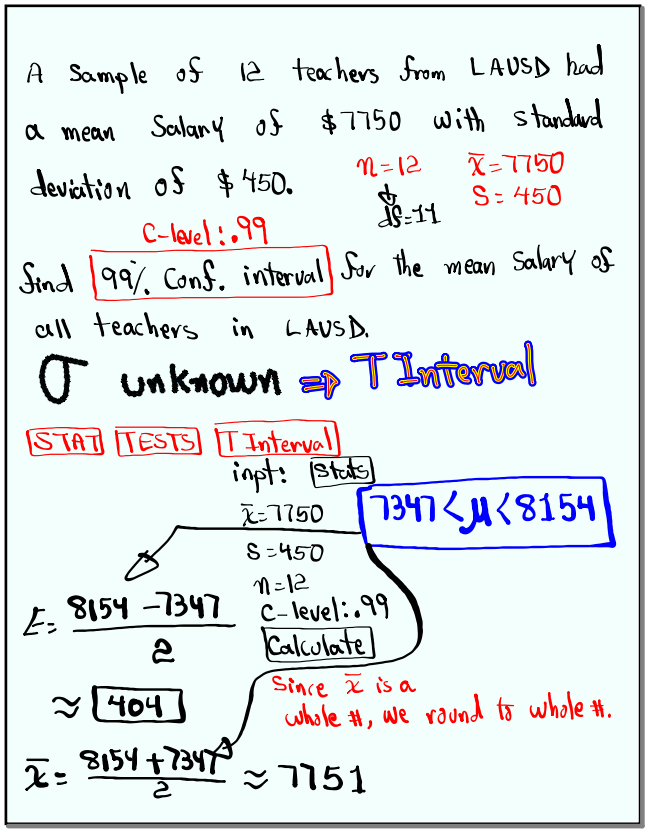
$\bar{x} - E < \mu < \bar{x} + E$

Case I: σ Known	Case II: σ Unknown
$E = z_{\alpha/2} \cdot \frac{\sigma}{\sqrt{n}}$	$E = t_{\alpha/2} \cdot \frac{s}{\sqrt{n}}$ $\quad df = n-1$
TI: STAT TESTS ZInterval	TI: STAT TESTS TInterval
inpt: Stats	inpt: Stats

Nov 13-8:54 AM



Nov 13-9:34 AM



Nov 13-9:45 AM