T-Test

1

$\mu_{pop} = 72$ b/m

$n = 25$

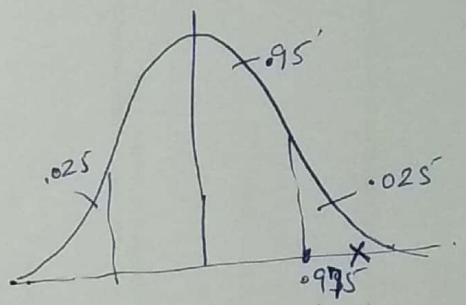
$\mu_s = 69$ b/m

$\sigma_s = 6.5$

Null → No effect

Hypo → Heart rate lowered

$$t = \frac{69 - 72}{6.5/\sqrt{25}} = -2.3$$



Assume 95% CL

$-2.3 > Z_c$ Rejects Null Hypothesis

2

$n = 30$

$\mu_{pop} = 15m$

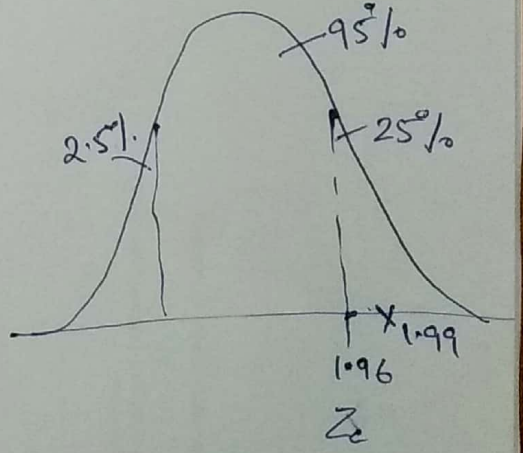
$\mu_s = 17m$

$\sigma_s = 5.5m$

SI = 5% → CL = 95%

$Z_c = 1.96$

$$t = \frac{17 - 15}{5.5/\sqrt{30}} = \frac{2\sqrt{30}}{5.5} = 1.99$$



Rejects Null Hypothesis

Null → Not Better shoe

Alternate → Better shoe

3

	PoP1	PoP2
$X =$	30	26
$\sigma = S =$	6.63	6.20
$n =$	15	15

Null → Usefull Traing

Alternate → Not useful

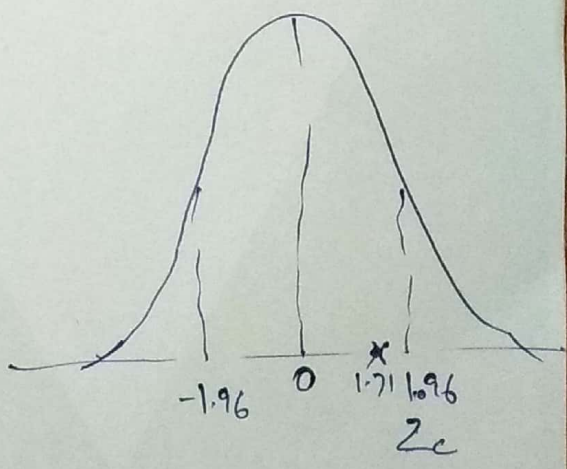
$$Z = \frac{(P_1 - P_2) - D}{\sqrt{\frac{P_1 q_1}{n_1} + \frac{P_2 q_2}{n_2}}} = \frac{(\bar{X}_1 - \bar{X}_2) - D}{\sqrt{\frac{\sigma_1^2}{n_1} + \frac{\sigma_2^2}{n_2}}}$$

$$= \frac{(30 - 26) - 0}{\sqrt{\frac{(6.63)^2}{15} + \frac{(6.20)^2}{15}}}$$

$$Z = \frac{4}{\sqrt{2.9 + 2.5}} = \frac{4}{\sqrt{5.4}} = \frac{4}{2.3} = 1.711$$

Z_c for 5% = 1.96

Null Hypothesis Accepted



4

5

$\mu_{pop} = 16$

$n = 10$

$s = 2.05$

$\bar{x} = 18$

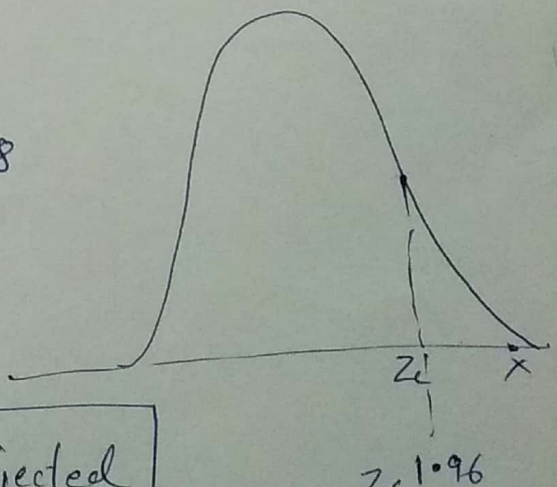
$\mu = 16$

Null → Complaints not high

Alternate → Complaints high $\mu \neq 16$

$$Z = \frac{18 - 16}{2.05/\sqrt{10}} = \frac{2\sqrt{10}}{2.05} = 3.08$$

Z_c for 5% CR/SL = 1.96



Null Hypothesis Rejected