Home work 4

Q1

i) $\mu = 11.52$ $\quad n = 20$ $\quad$ Confidence = 99%

$\bar{x} = 10.52$ $\quad s = 1.5$

$\alpha = 1 -$ Confidence level

$\alpha = 1 - 0.99 = 0.01$

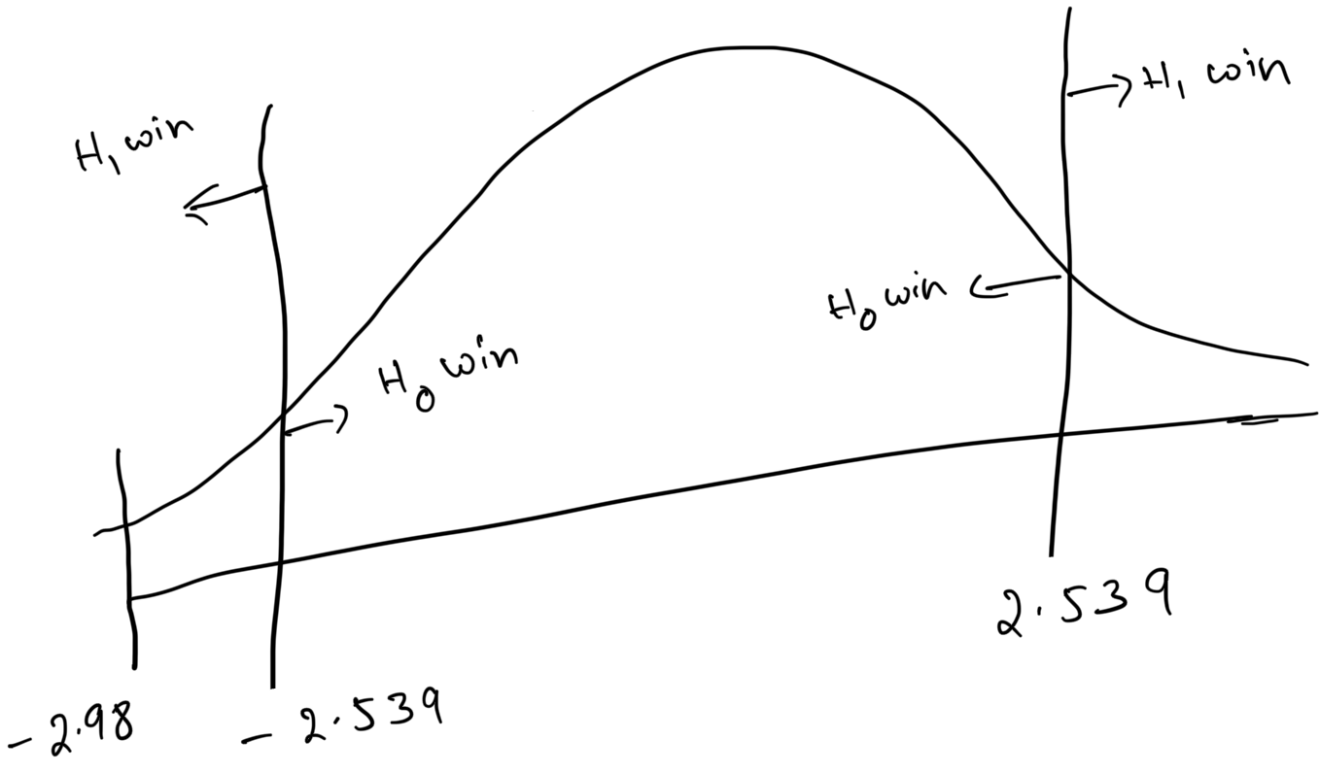
$H_0 : \mu = 11.52$

$H_1 : \mu < 11.52$

$df = n - 1 = 19$

Critical value $= 2.539$

$$t = \frac{\bar{x} - \mu}{s/\sqrt{n}} = \frac{10.52 - 11.52}{1.5/\sqrt{20}} = -2.98$$



decision cannot accept H_0

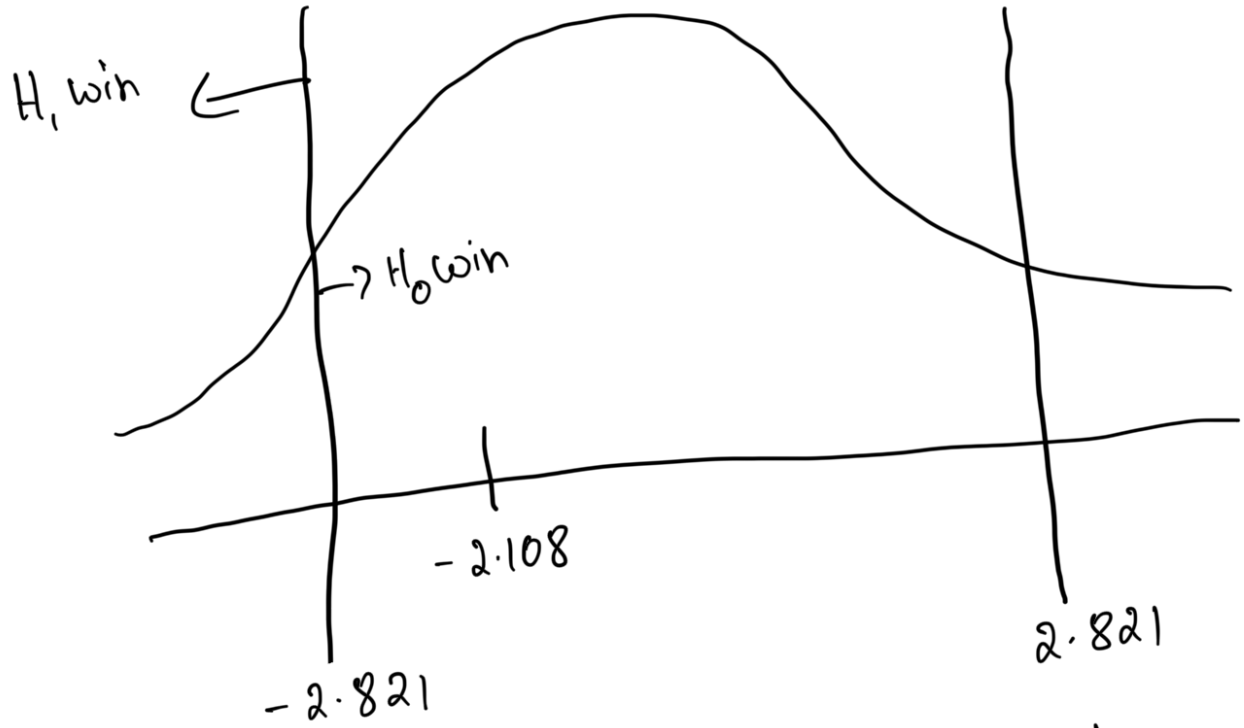
H_1 win

2) $n = 10$ $df = 9$ $\alpha = 0.01$

$\bar{X} = 10.52$ $S = 1.5$ $\mu = 11.52$

Critical value = 2.821

$$t = \frac{\bar{X} - \mu}{S/\sqrt{n}} = \frac{10.52 - 11.52}{1.5/\sqrt{10}} = 2.821$$



decision cannot accept H_1

H_0 win