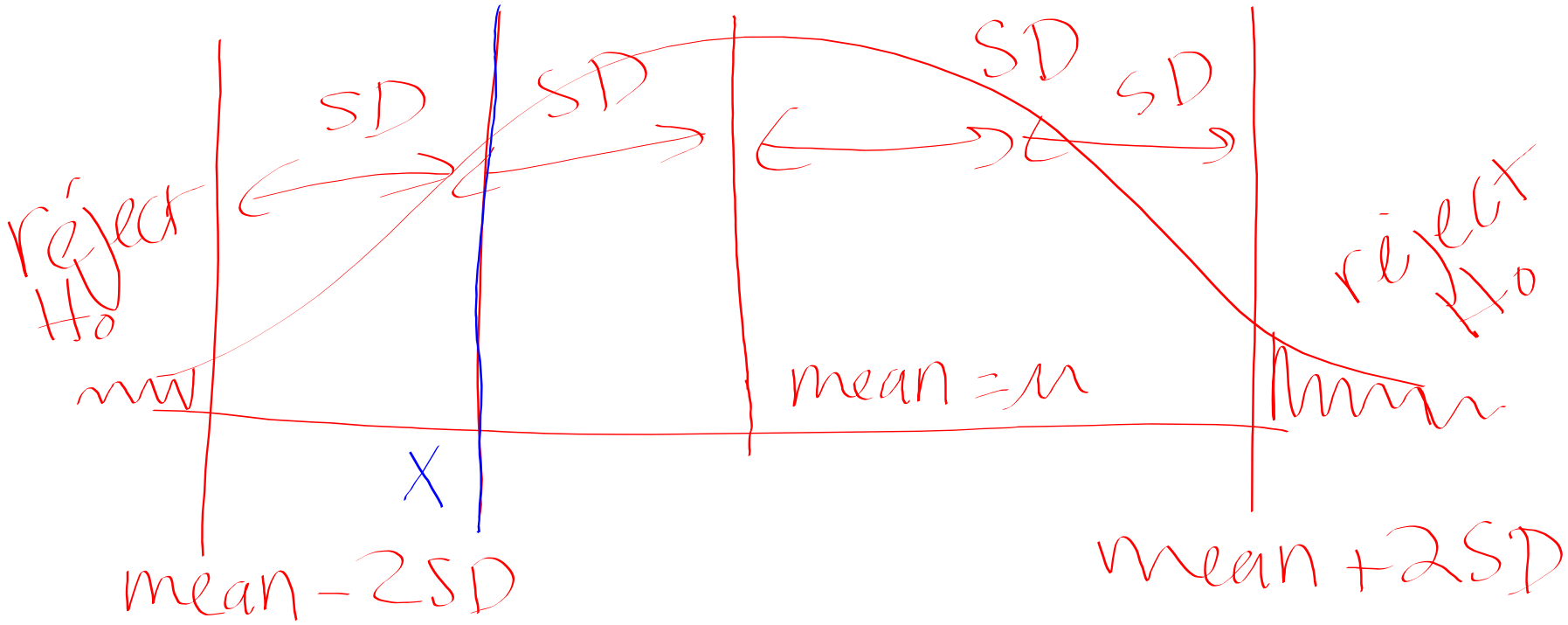
μ = population mean

$\bar{x}$ = sample mean

σ = population SD

s = sample SD

n = sample size

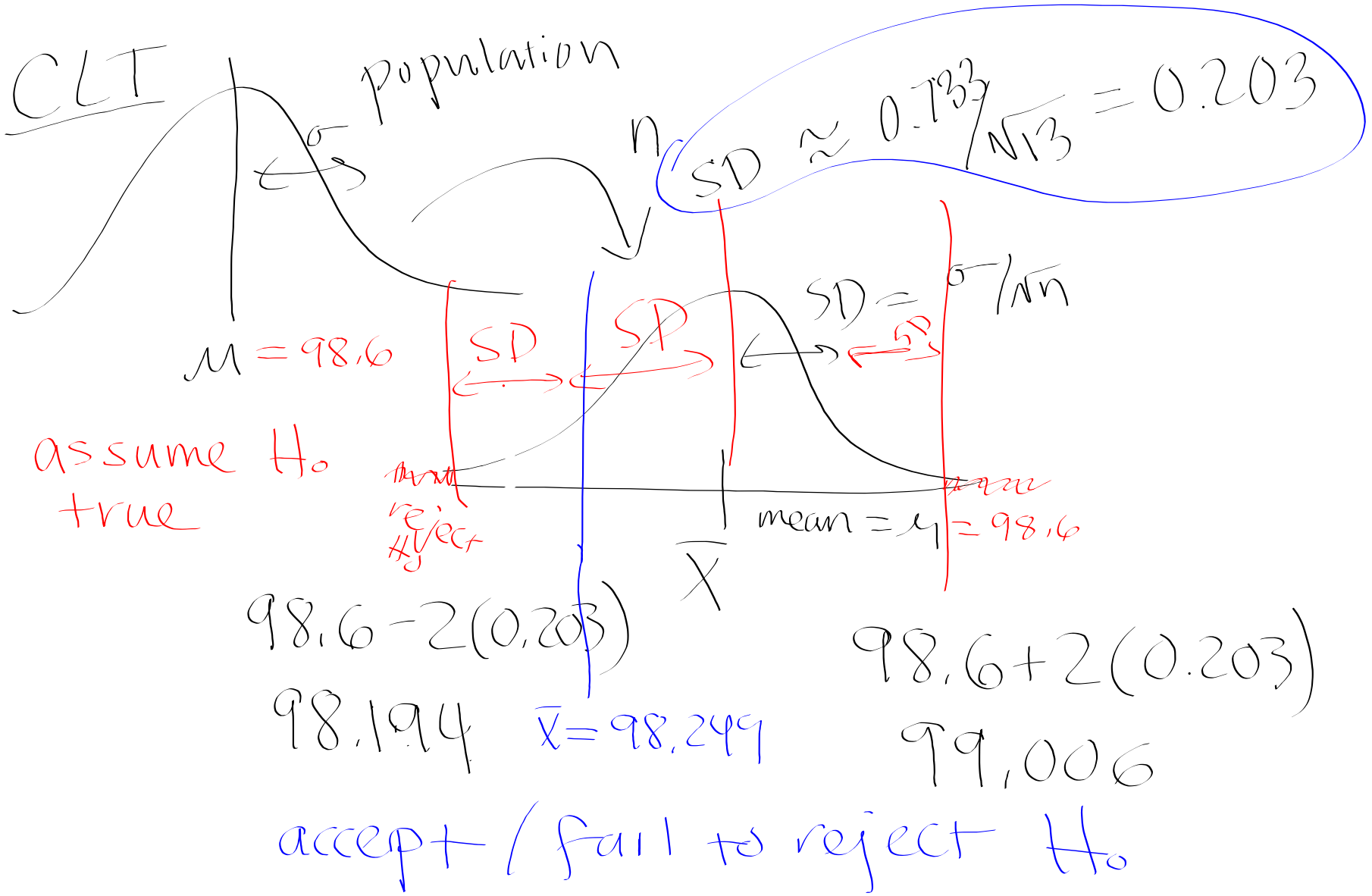

reject
H_0
SD
SD
SD
SD
reject
H_0
mean = μ
X
mean − 2SD
mean + 2SD

$$z = \frac{\bar{X} - \mu}{SD} = \frac{\bar{X} - \mu}{\sigma/\sqrt{n}}$$

try $t = \frac{\bar{X} - \mu}{S/\sqrt{n}}$

$$t = \frac{98.249 - 98.6}{0.203}$$

$$= -1.73$$


CLT
population
σ
n
SD ≈ 0.733/√13 = 0.203
μ = 98.6
SD
SD
SD = σ/√n
SD
assume H₀ true
reject
mean = μ = 98.6
X̄
98.6 − 2(0.203)
98.194
X̄ = 98.249
98.6 + 2(0.203)
99.006
accept / fail to reject H₀

Standard Normal

$$z\text{-score} = \frac{X - \text{mean}}{SD}$$

Carl is correct

$H_0: \mu = 98.6$

always "=" for H_0.

Carl is incorrect

$\mu \neq 98.6$

matches question