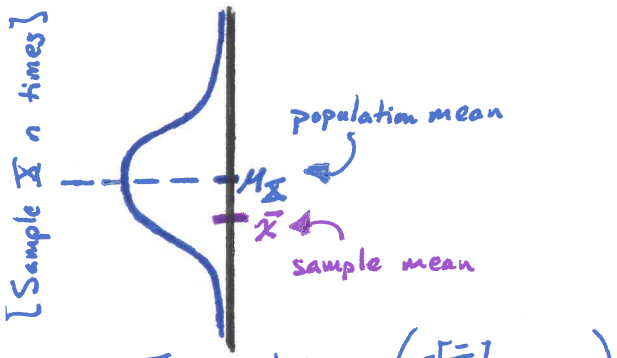
Progression of Ideas: Chapter 6 — Chapter 9

In Chapter 6 we made point estimates for $\mu_X = E[X]$

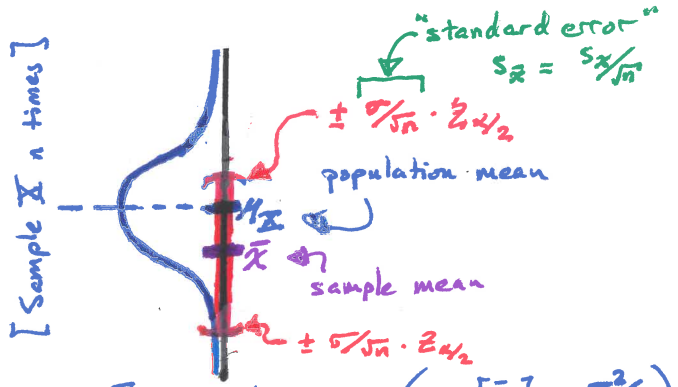


$\bar{X}$ Distribution $\left(E[\bar{X}] = \mu_X\right)$

$\mu_X \approx \bar{x}$

[point estimate for population mean]

In Chapter 7 we "thickened" point estimate into confidence int.

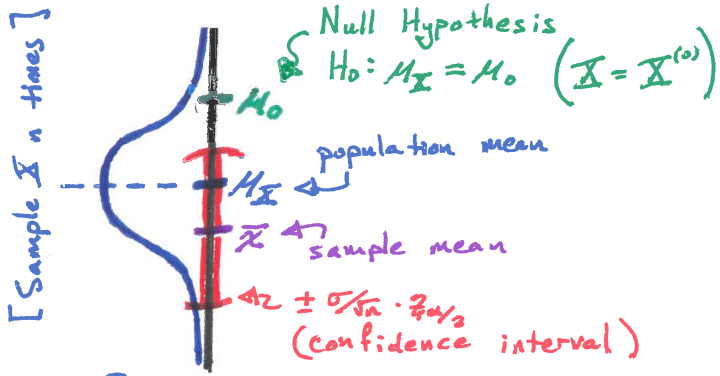


$\bar{X}$ Distribution $\left(\mathrm{Var}[\bar{X}] = \sigma^2/n\right)$

$\mu_X \approx \bar{x} \pm \sigma/\sqrt{n} \cdot z_{\alpha/2}$

[confidence interval for population mean]

In Chapter 8 we compared to "similar population" $\mu_0 = E[X^{(0)}]$

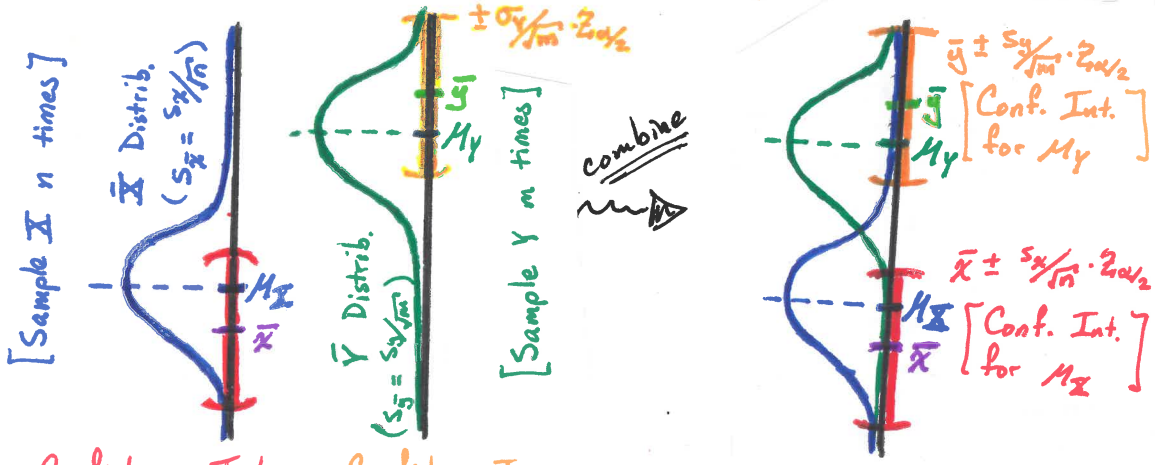


$\bar{X}$ Distribution

Know $\mu_X \approx \bar{x} \pm \sigma/\sqrt{n} \cdot z_{\alpha/2}$

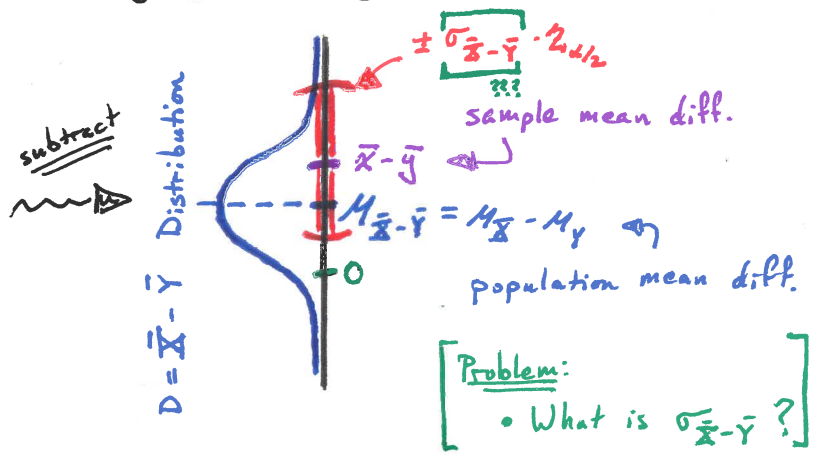
→ What about μ_0 ???

In Chapter 9 the "similar population" gets its own confidence interval (Change $X^{(0)}$ to Y)



$H_0: \mu_X = \mu_Y$ $(X = Y)$

Plan: Reduce to previous case by subtracting: $D = \bar{X} - \bar{Y}$



$H_0: \mu_X - \mu_Y = \mu_D = 0$