This time: 2-sample problem (quant.)

next time: ↓ (1/0)

read: LN

pp. (201) – (213)

AMS 7 SNow 15

①

today: (LN) L-(IFG) → end of 2-sample quant.

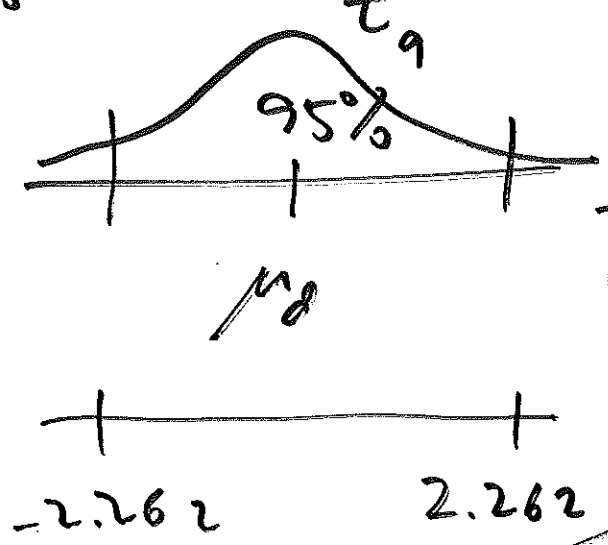
(hw due next Tue)

see web page for webdisc. see next week

accounting for uncertainty in σ_d

long run list of d_i's

$\hat{SE}$ 0.97 cm



$$\hat{SE}(\bar{d}) \overset{IID}{=} \frac{s_d}{\sqrt{n}} = \frac{3.06 \text{ cm}}{\sqrt{10}} \doteq 0.97 \text{ cm}$$

95% CI for

$$\mu_d = \bar{d} \pm (2.262)\, \hat{SE}(\bar{d})$$

$t^{0.95}_{n-1}$ $\quad$ 2.19

$$= 3.30 \pm (2.262)(0.97)$$

8.51

$\hat{SE}$ 0.36 days

long run list of $(\bar{Y}_2 - \bar{Y}_1)$

$(\mu_2 - \mu_1)$

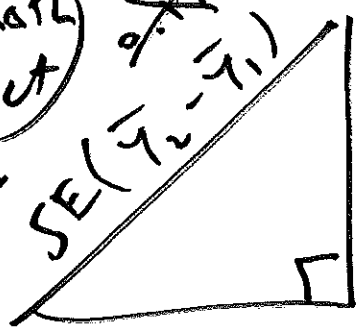
Q_1 $SE(\bar{Y}_2 - \bar{Y}_1) = ?$

Q_2 $SE(\bar{Y}_2 - \bar{Y}_1) \overset{?}{=} SE(\bar{Y}_2) \; ? \; SE(\bar{Y}_1)$

$\bar{Y}_1$ unc. is $\hat{SE}_1 = 0.27$ days

$\bar{Y}_2$ $\hat{SE}_2 = 0.24$ days

A_2 math fact



$0.27 < \hat{SE}(\bar{Y}_2 - \bar{Y}_1) < 0.51$

$(0.27 + 0.24)$

$$\hat{\sigma}_{\bar{Y}_2 - \bar{Y}_1} = \sqrt{\left[\hat{\sigma}_{\bar{Y}_1}\right]^2 + \left[\hat{\sigma}_{\bar{Y}_2}\right]^2}$$

$$= \sqrt{\left(\frac{s_1}{\sqrt{n_1}}\right)^2 + \left(\frac{s_2}{\sqrt{n_2}}\right)^2}$$

$$\hat{\sigma}_{\bar{Y}_2 - \bar{Y}_1} = \sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}$$

$$\| $$

$$\hat{\sigma}_{\bar{Y}_1 - \bar{Y}_2}$$