

Your Turn #1:

Find the linear combination for: Does the average of the means scores for the mobility disabilities equal the mean score for the hearing disability?

$$\frac{1}{3} \quad -1$$

$$C_{\text{wheelchair}} = C_{\text{crutches}} = C_{\text{computer}} = \frac{1}{3}$$

$$C_{\text{hearing}} = -1$$

$$C_{\text{none}} = 0$$

$$\frac{1}{3} (\mu_{\text{wheel}} + \mu_{\text{crutches}} + \mu_{\text{comp}}) \quad \text{---} \quad \mu_{\text{hearing}}$$

average for mobility mean hearing

$$\frac{1}{3} \mu_{\text{wheel}} + \frac{1}{3} \dots \quad \text{---} \quad \mu_{\text{hearing}}$$

↑

7/10

Your Turn # 2

Estimate & find SE for:

$$\mu_{\text{hearing}} - \frac{1}{3} (\mu_{\text{Mamputee}} + \mu_{\text{crutches}} + \mu_{\text{wheelchair}})$$

Estimate: plug in sample avgs for means

$$4.05 - \frac{1}{3} (4.43 + 5.92 + 5.34) = -1.18$$

$$SE_g = s_p \sqrt{\frac{.12}{14} + \frac{(-\frac{1}{3})^2}{14} + \frac{(-\frac{1}{3})^2}{14} + \frac{(-\frac{1}{3})^2}{14}} = 0.50$$

Your turn # 3

Test null hypothesis: $\mu_{\text{hearing}} = \frac{1}{3} (\mu_{\text{Mamp}} + \mu_{\text{crutches}} + \mu_{\text{wheel}})$

t-ratio $\frac{g - \gamma}{SE_g} = \frac{(-1.18 - 0)}{0.50} = -2.36$ t-statistic
in $R^2(1 - pt(2.36, 65)) = 0.02$

95% CI for $\mu_{\text{hearing}} - \frac{1}{3} (\mu_{\text{Mamp}} + \mu_{\text{crutches}} + \mu_{\text{wheel}})$

$$g \pm 2 SE_g = -1.18 \pm 2(0.5) = (-2.18, -0.18) \text{ 95\% CI}$$