207 Midterm

3a) Testing that slopes are equal, no interaction. This is one of the conditions for being able to adjust for baseline. (Do $D_i | Y_{i1}$)

b) $\left(\frac{(0.613 - 0.401)}{\sqrt{(0.202)^2 + (0.0877)^2}} \right)^2 \sim \chi^2_1$

↑ Wald

c) $\underset{\sim}{\hat{\beta}}_{A\ [3\times1]}$ = param est of A, $\underset{\sim}{\hat{\beta}}_{P\ [3\times1]}$ = param est of P

$\underset{\sim}{\hat{\delta}}_{[3\times1]} = \underset{\sim}{\hat{\beta}}_A - \underset{\sim}{\hat{\beta}}_P$

Cov matrix of A: $\hat{V}_A$, Cov matrix of P: $\hat{V}_P$

$\widehat{cov}(\underset{\sim}{\hat{\delta}}) = \hat{V}_A + \hat{V}_P = \hat{V}$ ← Since $A \perp P$, so no corr

Wald Chi-Sq Test: $\underset{\sim}{\hat{\delta}}^T \hat{V}^{-1} \underset{\sim}{\hat{\delta}} \sim \chi^2_3$

Wald generally: $\frac{(\hat{\theta} - \theta_0)^2}{Var(\hat{\theta})}$