**PSQF 6243 FA6 Starter Kit**

Please answer the questions below about the following model. Assume all variables are centered at 0. To refer to the fixed effects, you can write "beta" and then the number of its subscript (e.g., beta0).

$$y\_{i}=β\_{0}+β\_{1}\left(F\_{i}\right)+β\_{2}\left(G\_{i}\right)+β\_{3}\left(H\_{i}\right)+β\_{4}\left(I\_{i}\right)+β\_{5}\left(F\_{i}\right)(G\_{i})+β\_{6}\left(F\_{i}\right)(H\_{i})+e\_{i}$$

1. Write the equation (and corresponding programming statement) for the predicted outcome (i.e., conditional mean from the fixed effects only) for someone with F=2, G=3, H=4, and I=5.

yhat = beta0 + beta1(\_) + beta2(\_) + beta3(\_) + beta4(\_) + beta5(\_)(\_) + beta6(\_)(\_)

ESTIMATE "yhat for F=2, G=3, H=4, I=5" intercept \_  F \_  G \_  H \_  I \_  F\*G \_  F\*H \_;

lincom \_cons\*\_ + F\*\_ + G\*\_ + H\*\_ + I\*\_ + F#G\*\_ + F#H\*\_ // yhat for F=2, G=3, H=4, I=5

GLHT "yhat for F=2, G=3, H=4, I=5" = c(\_\_,\_\_,\_\_,\_\_,\_\_,\_\_,\_\_)

2. Write the equation (and corresponding program statement) for the predicted G slope for someone with F=2.

G slope =

ESTIMATE "G slope for F=2" intercept \_  F \_  G \_  H \_  I \_  F\*G \_  F\*H \_;

lincom \_cons\*\_ + F\*\_ + G\*\_ + H\*\_ + I\*\_ + F#G\*\_ + F#H\*\_ // G slope for F=2

GLHT "G slope for F=2" = c(\_\_,\_\_,\_\_,\_\_,\_\_,\_\_,\_\_)

3. Write the equation (and corresponding programming statement) for the predicted F slope for someone with G=3 and H=4.

F slope =

ESTIMATE "F slope for G=3 and H=4" intercept \_  F \_  G \_  H \_  I \_  F\*G \_  F\*H \_;

lincom \_cons\*\_ + F\*\_ + G\*\_ + H\*\_ + I\*\_ + F#G\*\_ + F#H\*\_ // F slope for G=3 and H=4

GLHT "F slope for G=3 and H=4" = c(\_\_,\_\_,\_\_,\_\_,\_\_,\_\_,\_\_)

4. Write the equation and (and corresponding programming statement) for the predicted I slope for someone with an F=2, G=3, and H=4.

I slope =

ESTIMATE "I slope for F=2, G=3, and H=4" intercept \_  F \_  G \_  H \_  I \_  F\*G \_  F\*H \_;

lincom \_cons\*\_ + F\*\_ + G\*\_ + H\*\_ + I\*\_ + F#G\*\_ + F#H\*\_ // I slope for F=2, G=3, and H=4

GLHT " I slope for F=2, G=3, and H=4" = c(\_\_,\_\_,\_\_,\_\_,\_\_,\_\_,\_\_)