3. Run the standard multiple regression analysis (the full model with all variables entered into the model simultaneously). ANALYZE, REGRESSION, LINEAR...Be sure to request descriptives and collinearity diagnostics along with the default selections. *Is the model significant in predicting development? Yes $F_{(3,26)} = 55.342, P < .001$ & tolerance > .1 so no violation.*

4. Now suppose that you entered the study knowing that most previous researchers used the Temperament variable to predict development. In your review of the literature, you are led to hypothesize that perhaps Home Environment and Social Support will predict additional variance in the dependent variable (Development) above and beyond what can be predicted by Temperament alone. Run a regression analysis that compares two hierarchical models against each other--The "reduced" model using Temperament only vs. your "full" model using Temperament, Social Support, and Home Environment. ANALYZE, REGRESSION, LINEAR, RESET if necessary. Be sure to *RESET* request descriptiveas, collinearity diagnostics, and R Squared Change along with the default selections. *Standard multiple regression (Enter) in Q 1* *Temperament* *Method: Enter*

NOW use hierarchical or sequential *Next*

5. Evaluate the tolerance statistics. Is multicollinearity a problem? *SSupport, Home Envii*
No problems -- no tolerance stats are < .1

6. What percentage of variability in Development is explained by the Temperament only model? *33.9% or 34%*

7. For the Temperament only model, how much distance do we expect, on average, between predicted Development and actual Development scores? *SEE = 12.061*

8. What percentage of additional variability in Development is explained when Social Support and Home Environment are included in the model (above and beyond the variability explained by Temperament)? *$R^2_{change} = 52.6$ or 53%*

9. What is the total percentage of variability explained by the "full" model using all three independent variables? *$R^2 = 86.5\%$ or 87%*

10. Is the Temperament only model significant in predicting Development? Explain. *Yes $F_{(1,28)} = 14.354, P = .001$*

11. Is the "full" Temperament, Social Support, and Home Environment model significant in predicting Development? Explain. *Yes $F_{(3,26)} = 55.342, P < .001$*

12. Which of these two models would you use to make predictions about Developmental abilities? Explain. *the full model because it explains 86.5% variability in Devel. compared to 33.9% with Temp. only model*

13. Write the regression equation for Development.
$\hat{Y} = -8.307 + (.447)(\text{social support}) + (.29)(\text{Temp.}) + (.563)(\text{Home Environ.})$
$\hat{Y} = a + (x_1)(b_1) + (x_2)(b_2) + (x_3)(b_3)$