PSYC 5301: Research Methods

Tarleton State University — Homework 8

1. Consider the following data:

X	3	6	3	3	5
Y	6	1	4	3	1

   (a) Compute the linear regression equation for predicting Y from X.

   (b) Perform an ANOVA to test whether X is a significant predictor of Y.

2. Consider the following data:

X	7	9	6	12	9	5
Y	6	6	3	5	6	4

   (a) Compute the linear regression equation for predicting Y from X.

   (b) Perform an ANOVA to test whether X is a significant predictor of Y.

3. Suppose we obtained SAT scores and freshman grade point averages (GPAs) for a group of $N = 15$ college students. The SAT scores have a mean of 580 with $SS = 22,400$, and the GPAs have a mean of 3.10 with $SS = 1.26$. Further, the correlation between SAT and GPA is 0.50.

   - Find the regression equation for predicting GPA from SAT scores. What is the predicted GPA for an SAT score of 620?
   - What proportion of variance in GPAs is accounted for by the regression equation? Is this proportion statistically significant?