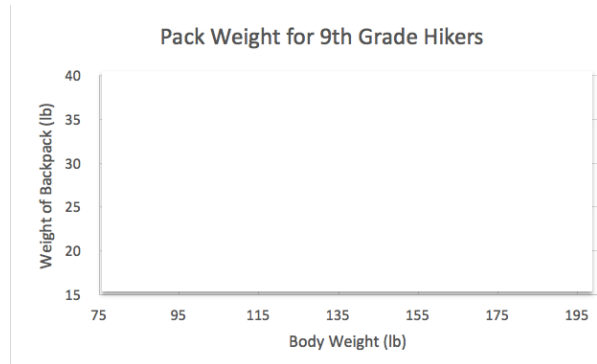


Problem: 9<sup>th</sup> grade students from Nutley HS go on a backpacking trip each year. They are randomly assigned to groups of 8 students. One group had their body weights and their backpack weights recorded before they set out. The data is in the table below.

Body Weight (lb)	120	187	109	103	131	165	158	116
Pack Weight (lb)	26	30	26	24	29	35	31	28
Predicted Response Value								
Residual Value								

- a) Make a scatterplot of this data on the chart provided.

Describe the pattern.



- b) Calculate the correlation ( $r$ ) and the Regression line for this data.

- c) Using this data, predict the backpack weight of a student who weighs 170 lb.

- d) Someone from one of the other groups left a backpack on the bus. The pack weighs 30 lbs. Estimate the weight of the student.

- e) Calculate the predicted response value and Residual value for each of the eight students and fill in the information in the table on the front.

Then plot this data on the chart below to create a Residual Plot.

- f) One student has a residual of nearly 4 pounds. Interpret this value.

- g) Based on your residual plot, do you think a linear model is appropriate for these data?

Why or why not?

