Jack Karlovec 11-20-2009

Montserrat Professor Little

Lab on Correlation, Regression and Data Analysis

1. There is a strong pattern between x = rank and y = population, so there is no linear relation. The r-value is fairly close to -1 or 1, which indicates a strong pattern present.
2. There is no linear relation between ln (y) and x because there is a pattern in the residuals. The r-value is fairly strong, close to -1, indicating a strong pattern.
3. There is a strong linear relation between ln (y) and ln (x), so it is a good fit for the data.
4. If you take out 1-8, and take data from 9-75 cities, then you will see a linear relationship. This is because cities 1-8 are the most extreme cities and have much higher populations then the rest.
5. It is still the same functional relationship between x = rank of the SMA, and y = population based on the data.
6. The statistic that could be used to measure uniformity of the polysilicon thickness across all the sites on one of the wafers would be the Standard deviation.
7. As you refer to the excel spreadsheets you can see that by taking out site 13, the standard deviation becomes lower then if site 13 was added. The average became higher with the removal of site 13 as well. This is because site 13 numbers are all relatively smaller then sites 1-12.

4. As you interpret the data from excel, you determine that there is not really a clear pattern shown. This means the relation (1) is a good fit for the data.

5. The signs of negative or positive correlation determine the trend of the data. A negative correlation shows a negative slope, where a positive correlation shows a positive slope.