HOT CHOCOLATE REGRESSION

The goal of this lab will be to model the cooling of hot chocolate by collecting data and conducting a basic regression analysis, including transformations, if any.

First, gather temperatures of hot chocolate at time intervals of 30 seconds for twenty minutes. Record your data below:

|  |  |  |  |
| --- | --- | --- | --- |
| ***TIME*** | ***TEMPERATURE*** | ***TIME*** | ***TEMPERATURE*** |
| 0 seconds |  | 10:30 |  |
| 30 |  | 11:00 |  |
| 1:00 |  | 11:30 |  |
| 1:30 |  | 12:00 |  |
| 2:00 |  | 12:30 |  |
| 2:30 |  | 13:00 |  |
| 3:00 |  | 13:30 |  |
| 3:30 |  | 14:00 |  |
| 4:00 |  | 14:30 |  |
| 4:30 |  | 15:00 |  |
| 5:00 |  | 15:30 |  |
| 5:30 |  | 16:00 |  |
| 6:00 |  | 16:30 |  |
| 6:30 |  | 17:00 |  |
| 7:00 |  | 17:30 |  |
| 7:30 |  | 18:00 |  |
| 8:00 |  | 18:30 |  |
| 8:30 |  | 19:00 |  |
| 9:00 |  | 19:30 |  |
| 9:30 |  | 20:00 |  |
| 10:00 |  |  |  |

Compare your data to someone’s around you – how do they compare?

Construct a scatterplot of your data below:



How would you describe the scatterplot?

Find the regression line and plot it on your scatterplot. Record your regression line below:

Find the correlation coefficient & interpret it….

Construct a residual plot of your data below:

Comment on the residual plot above – does it indicate a linear relationship?