To complete the assignment, electronically submit 2 files: Your written answers to the questions and a spreadsheet file that computes the necessary quantities to answer the questions. Consider the following data on y and x.

| ***y*** | ***x*** |
| --- | --- |
| *94* | *50* |
| *190* | *92* |
| *112* | *18* |
| *214* | *145* |
| *152* | *99* |
| *60* | *110* |
| *246* | *131* |
| *17* | *8* |
| *104* | *18* |
| *156* | *119* |
| *33* | *12* |
| *58* | *61* |
| *29* | *57* |
| *41* | *32* |
| *37* | *70* |

1. Make a scatter plot of the data in Excel or Google Sheets. Add gridlines to your graph.
2. Copy & paste your scatter plot into Paint or a similar program. Draw a line that you think Use your eye to find a line that best fits this data. Draw this line on your scatter plot using the line drawing tool. What estimates of and correspond to your line? (you can find approximate values using the gridlines on your graph to your advantage).
3. Define as the value of that your eyeball model predicts for observation (where ranges from 1-). In your spreadsheet, compute and for each observation. Use these to compute (Ignore the two doted boxes in the equation).
4. Use your spreadsheet for each observation, compute and Use them to compute the least squares estimates of and
5. Use these estimates to find predicted value of for each of the values. Letting be the least squares estimate of corresponding to an value of , compute the value of for each of the 15 observations in the data. Use these computed values of to compute . (Ignore the doted boxes)
6. Compare the values and Which value is lower? Provide a justification for this finding.
7. Provide an intuitive explanation of the total sum of squares, the explained sum of squares and the unexplained sum of squares due to error.
8. Suppose you have a set of paired data consisting of exactly two observations, and , and suppose that . Also assume that If you construct the regression line for this data set, what proportion of the total variation in the data will it explain? Why?