

FACULTY NOTES

The LTAs and Spinoffs are designed so that each professor can implement them in a way that is consistent with his/her teaching style and course objectives. This may range from using the materials as out-of-class projects with minimal in-class guidance to doing most of the work in class. The LTAs and Spinoffs are amenable to small group cooperative work and typically benefit from the use of some learning technology. Since the objective of the LTAs and Spinoffs is to support the specific academic goals you have set for your students, the Faculty Notes are not intended to be prescriptive. The purpose of the Faculty Notes is to provide information that assists you to take full advantage of the LTAs and Spinoffs. This includes suggestions for instruction as well as answers for the exercises.



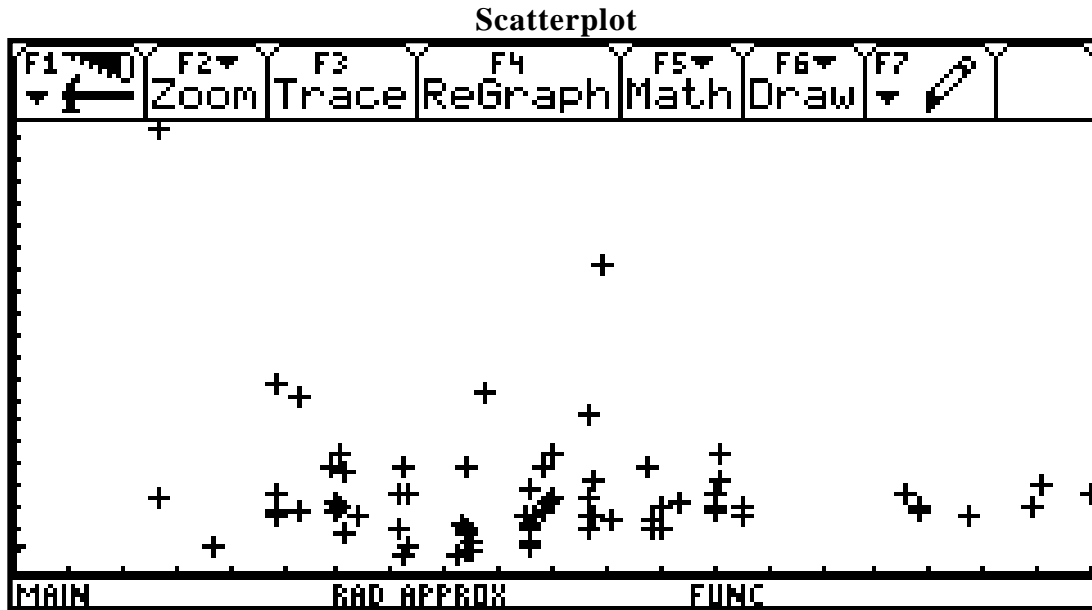
FACULTY NOTES

SPINOFF 9C

Scatterplots and Regression Lines with the TI-92™

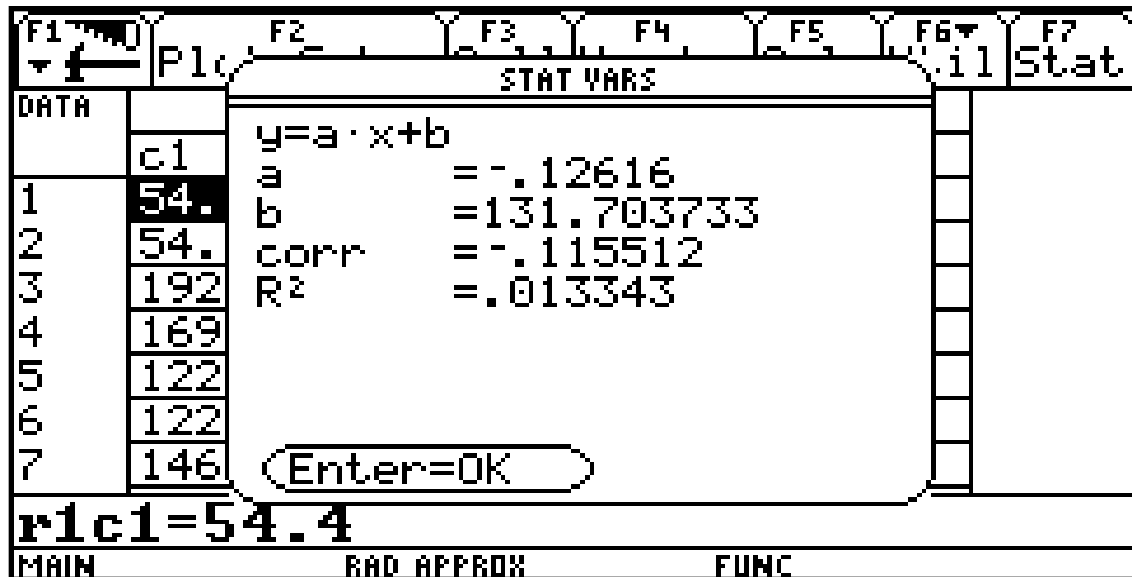
Answers

- 1) The following is a scatterplot of 75 data points where x = mission duration and y = time spent in the OPF. This scatterplot was done using a TI-92™. The dimensions of the window are 400 (x-axis) and 620 (y-axis). The x-scale is 20; the y-scale is 30.



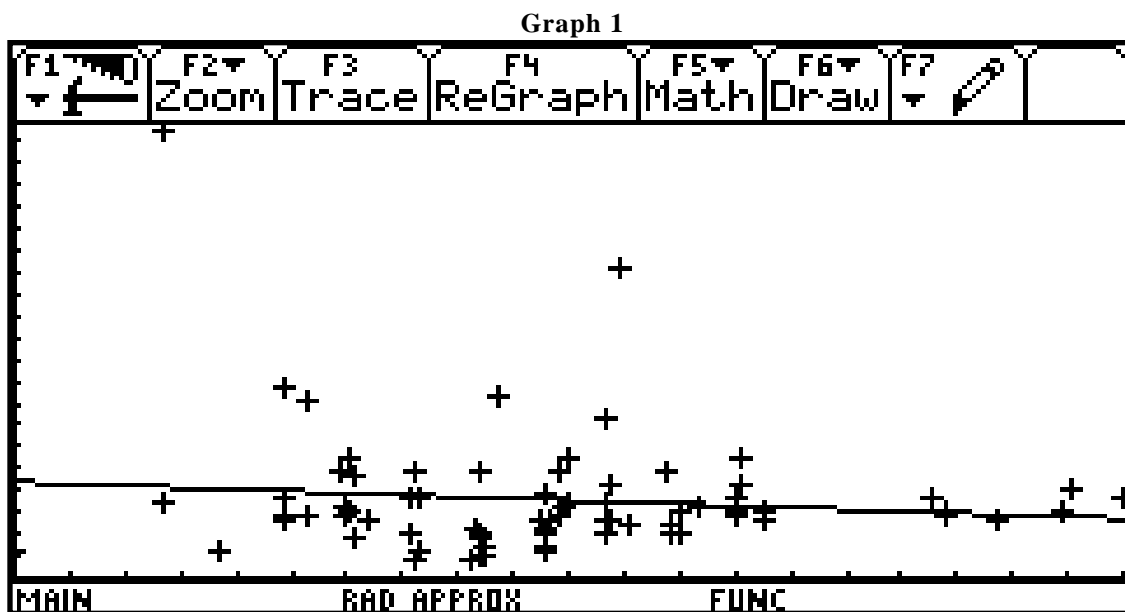
The scatterplot shows that the time spent in the OPF decreases slightly as the mission duration time increase. However, this decrease is small and is no longer evident if the outlier datum, (54.2, 613), is removed. There seems to be very little relationship between mission duration time and time spent in the OPF.

- 2) The following is the linear regression equation and correlation coefficient as shown on a TI-92™.

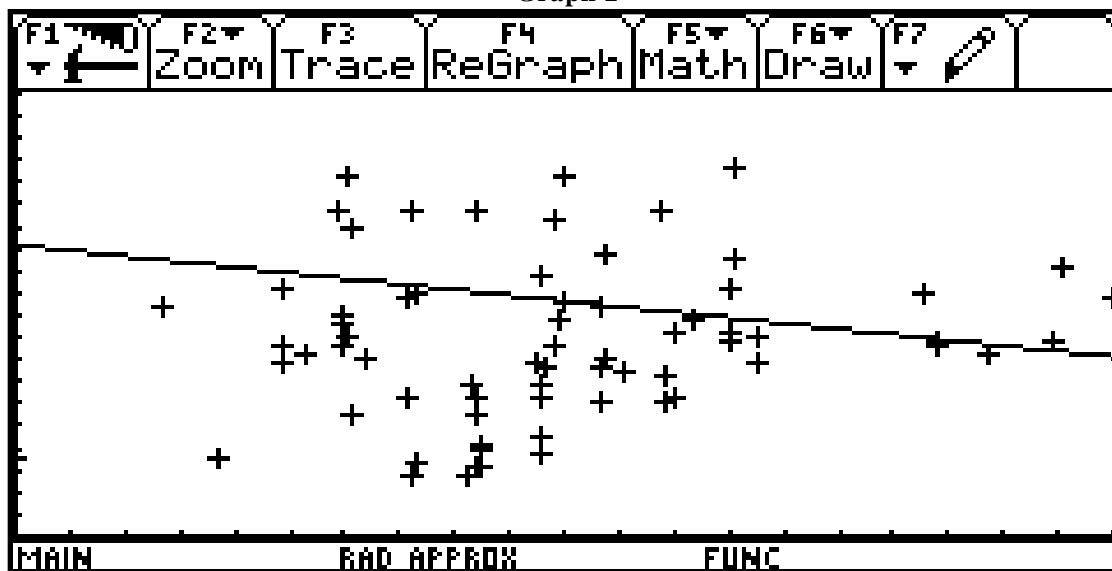


The correlation coefficient is so close to 0 that we cannot conclude that a linear function is a useful model for prediction. Even though we can find a best-fit linear equation, it does not appear to be useful. The x variable (mission duration time) does not have a lot of explanatory power for the y-variable (time spent in the OPF).

- 3) The following are two graphs of the the scatterplot together with the linear regression line. The x-dimension of the window for both is [0, 400]. The y-dimension of graph 1 is [0, 620], the y-dimension of graph 2 is [0, 200].



Graph 2



There does not appear to be a very good fit between the data points and the line.