

Activity 2: Lines of Best Fit

Using your program and the following data, find a line of best fit.

1. Enter the data into lists in your calculator.

x	y
10	120
20	129
30	146
40	163
50	187
60	199
70	212

2. Enter a guess for a trend line into the function grapher in your calculator.
3. Use your program to find a line of best fit. Record your trend lines and the corresponding sums of squares:

Equation	Sum of Squares

4. Compare your equation and your least sum of squares with your group.

5. In your group, refer to the data collection activities in 2.1 Out For a Stretch. Enter a data set from one of the activities. Use your program to find a line of best fit. Compare that line with those from your group members. Also compare that line with the trend line you found when you first completed the activity.

Is the converse true?

6. Using the linear regression on your calculator, find a line of best fit for the data below. Note the value of the correlation coefficient, r .

x	y
0	0
1	1
2	4
3	9
4	16
5	25

7. Find first differences and then second differences for the data above. What do you find?
8. If $|r|$ is close to 1, have you necessarily found the most appropriate model? Why or why not?

Reflect and Apply

1. What is the difference between a trend line and a line of best fit?
2. When do you believe students should find trend lines and when should they find lines of best fit?
3. How can you use technology to enhance student understanding, without allowing the student to rely on the technology as a crutch with little understanding of what the technology is doing?
4. How can you use linear regression on your calculator to find the equation of the line between two points?