Topic: Line of Best Fit **Date**: _____

What am I learning today?

_____

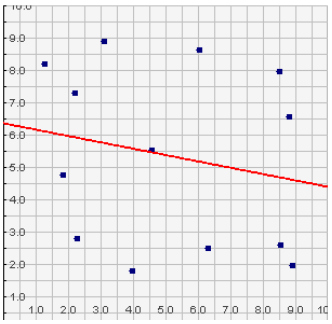
_____

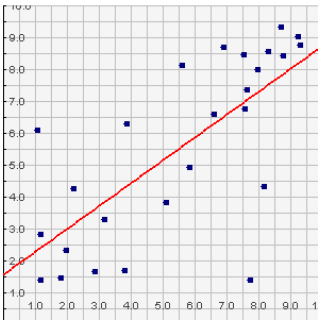
Main Ideas/ Questions

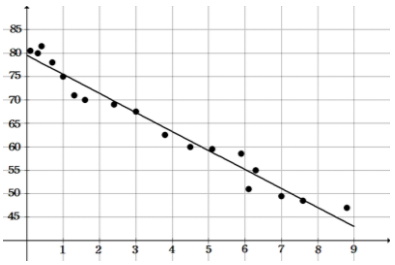
Line of Best Fit

Notes

Line of Best Fit – A line that lies as _____to all the data points. The best-fitting line should lie so that as many points as possible are _____ the line. Of the points that are NOT on the line - approximately _____ should be above the line and half below the line.







Calculating Line of Best Fit with Technology

The best way to construct a best-fitting line is to use a _____ or computer program; a calculator computes the equation of the best-fitting line using a method called _____

****When drawing a best-fitting line by _____, it is ok if your line is slightly different from someone else's as long as both follow the trend of the data

Examples

Roughly sketch where you think the line of best fit would be on each scatterplot below:

Calculator Instructions

Calculator Instructions	
TI – 36X	**TI - 83/84**
Step 1: DATA **Step 2:** Input data into two lists $L_1 \rightarrow X$ and $L_2 \rightarrow Y$ **Step 3:** 2nd → DATA **Step 4:** Choose #4 LinReg(ax+b)	**Step 1**: 2nd → CATALOG (0) **Step 2**: Scroll down to "Diagnostics On" ENTER TWICE (Should say DONE) **Step 3**: STAT → #1: EDIT Input data into two lists $L_1 \rightarrow X$ and $L_2 \rightarrow Y$ **Step 4**: STAT → CALC **Step 5**: Choose #4: LinReg(ax+b)

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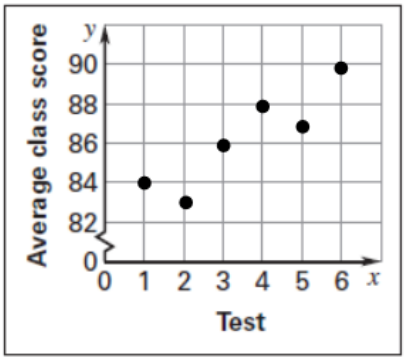
Main Ideas/ Questions

Example

Notes

The table gives the average class score, *y*, on each chapter test for the first six chapters, *x*, of the textbook.

x	1	2	3	4	5	6
y	84	83	86	88	87	90



a) Approximate the equation for the best-fitting line using the calculator.

b) What is the correlation coefficient (r)?

c) Using the correlation coefficient, describe the relationship between test number and class score. (Direction and strength)

c) What does the slope (a) mean in context?

d) What does the y-intercept (b) mean in context?

e) Use your equation to predict the average score on the Chapter 9 test.

f) What is the maximum test number that you will have to take to reach a 94% class average?

g) What happens to the correlation if you switch the explanatory and response variables?

h) What happens to correlation if your teacher curves each test by 5 points?