

AP Statistics

M9Z

Chapter 5: Summarizing Bivariate Data

Homework 1

Exercises 5.2, 5.4, 5.6, 5.10, 5.12

from the textbook "Introduction to Statistics & Data Analysis, 4th edition".

Exercise (**Anscombe's Quartet**):

For each one of the following 4 data sets, construct a scatterplot and calculate the correlation coefficient. What do you observe?

Data Set							
I		II		III		IV	
x	y	x	y	x	y	x	y
10.0	8.04	10.0	9.14	10.0	7.46	8.0	6.58
8.0	6.95	8.0	8.14	8.0	6.77	8.0	5.76
13.0	7.58	13.0	8.74	13.0	12.74	8.0	7.71
9.0	8.81	9.0	8.77	9.0	7.11	8.0	8.84
11.0	8.33	11.0	9.26	11.0	7.81	8.0	8.47
14.0	9.96	14.0	8.10	14.0	8.84	8.0	7.04
6.0	7.24	6.0	6.13	6.0	6.08	8.0	5.25
4.0	4.26	4.0	3.10	4.0	5.39	19.0	12.5
12.0	10.84	12.0	9.13	12.0	8.15	8.0	5.56
7.0	4.82	7.0	7.26	7.0	6.42	8.0	7.91
5.0	5.68	5.0	4.74	5.0	5.73	8.0	6.89

The 4 data sets and corresponding scatterplots comprise **Anscombe's Quartet**. They were created in 1973 by the English statistician Francis Anscombe and appeared in his paper titled "Graphs in Statistical Analysis." Anscombe, among other things, wanted to demonstrate the necessity of graphing and inspecting data visually before analyzing it. Since then, several methods to produce similar data sets have been developed. For more examples, check [the Datasaurus Dozen](#).