

1.3: Presentation of Data

Learning Objectives

- To learn two ways that data will be presented in the text.

In this book we will use two formats for presenting data sets. The first is a data list, which is an explicit listing of all the individual measurements, either as a display with space between the individual measurements, or in set notation with individual measurements separated by commas.

✓ Example 1.3.1

The data obtained by measuring the age of 21 randomly selected students enrolled in freshman courses at a university could be presented as the data list:

18 18 19 19 19 18 22 20 18 18 17
19 18 24 18 20 18 21 20 17 19

or in set notation as:

$\{18, 18, 19, 19, 19, 18, 22, 20, 18, 18, 17, 19, 18, 24, 18, 20, 18, 21, 20, 17, 19\}$

A data set can also be presented by means of a data frequency table, a table in which each distinct value x is listed in the first row and its frequency f , which is the number of times the value x appears in the data set, is listed below it in the second row.

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✓ Example 1.3.2

The data set of the previous example is represented by the data frequency table

| | | | | | | | |
|-----|----|----|----|----|----|----|----|
| x | 17 | 18 | 19 | 20 | 21 | 22 | 24 |
| f | 2 | 8 | 5 | 3 | 1 | 1 | 1 |

The data frequency table is especially convenient when data sets are large and the number of distinct values is not too large.

Key Takeaway

- Data sets can be presented either by listing all the elements or by giving a table of values and frequencies.

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