**Exercises for Lecture 1**

1. The table below shows the height of students in classroom A (total of 15 students) and classroom B (total of 16 students), measured in centimeters. For each of the classroom, calculate the following:
   1. Median

**Classroom A:**

Numbers get sorted:

154, 156, 158, 160, 162, 165, 169, 169, 170, 171, 172, 175, 175, 180 189

Middle value is found: 169.

**Classroom B:**

Numbers get sorted:

161, 163, 169, 173, 174, 174, 175, 176, 179, 180, 180, 182, 182, 182, 185, 191

Two middle values are found and the average of those two is the result:

The median for Classroom B is therefore 177,5

* 1. Mean

**Classroom A:**

All the data variables are added together and divided by how big the dataset is:

The mean height of Classroom A is 168,33.

**Classroom B:**

All the variables are added together and divided by how big the data set is:

The mean height of Classroom B is 176,63.

* 1. Mode

**Classroom A:**

This dataset has two: 175, 169.

**Classroom B:**

The mode for Classroom B is 182.

* 1. Midrange

**Classroom A:**

**Classroom B:**

1. Find the mean of the following data:

20, 26, 40, 36, 23, 42, 35, 24, 30

1. Find the median of the following measurements:

713, 300, 618, 595, 311, 401, and 292

292, 300, 311, 401, 595, 618, 713

1. Find the median of the following measurements:

684, 764, 656, 702, 856, 1133, 1132, 1303

684, 656, 702, 764, 856, 1132, 1133, 1303

1. Find the mode of the following measurements:

8, 9, 9, 14, 8, 8, 10, 7, 6, 9, 7, 8, 10, 14, 11, 8, 14, 11

6, 7, 7, 8, 8, 8, 8, 8, 9, 9, 9, 10, 11, 11, 10, 14, 14, 14

1. Find the mode of the following measurements:

110, 731, 1031, 84, 20, 118, 1162, 1977, 103, 752

20, 84, 103, 110, 118, 731, 752, 1031, 1162, 1977

There is none.

1. Find the midrange of these data:

2, 3, 6, 8, 4, 1

1. A researcher wants to collect data on 100 inhabitants living in one specific town. Classify the following collected variables according to their type (Nominal, ordinal, discrete, or continuous)
   1. Occupation (“blue collar”, “white collar”, “unemployed”)  
      Nominal
   2. Highest attained education (“low”, “medium”, high”)  
      Ordinal
   3. Monthly salary  
      Continuous
   4. Civil status (“single”, “married”, “widow”)  
      Nominal
   5. Number of children  
      Discrete
2. Evaluate the following statements as true or false:
   1. In statistics, a population always refers to humans.  
      False
   2. A sample is a subset of the study population.  
      True
   3. Inferential statistics are statistical techniques used to draw conclusions about one specific sample.

False

* 1. A survey will be given to 100 students randomly selected from the freshmen class at Odense High School. The sample is all the freshmen at Odense High School.  
     False

1. Find the range, variance and standard deviation for the data set for the samples of Brand A and Brand B paint.

Table

Description automatically generated

**Brand A**

1. Range
2. Variance
3. If the variance of a distribution is 9, the standard deviation is:

a. 3

b. 6

c. 9

d. 81

e. impossible to determine without knowing n.

1. The standard deviation of a dataset is 10. If 5 were subtracted from each measurement, the standard deviation of the new

dataset would be:

1. 2
2. 10/25
3. 5
4. none of these.