

5 Beschreibende Statistik

Englische Aufgaben

5.1 For each type of data, write down whether it is a qualitative data or quantitative data.

- The countries in South America.
- The heights of trees in a forest.
- The tastes of meals.
- The colours of ski gloves in a store.
- The lengths of electric cables.
- The numbers of chairs in classrooms.
- The names of employees in a company.
- The areas of swimming pools.
- The number of trains per day.
- The hobbies of teenagers.

[employee ... Mitarbeiter]

5.2 A tourist agency asked 36 people where they went for their last city trip in Europe. Here are their answers.

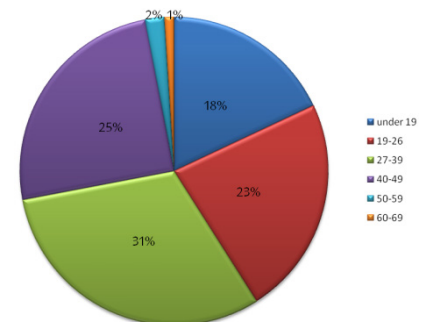
London	Rome	Brussels	Salzburg	Rome	Amsterdam
Vienna	London	London	Brussels	London	Amsterdam
Paris	Paris	Paris	Amsterdam	Berlin	Brussels
Bilbao	Salzburg	Vienna	Amsterdam	Rome	Vienna
London	London	Paris	Prague	Bilbao	Vienna
Paris	Vienna	Rome	Prague	Berlin	Amsterdam

- Record the data in a frequency table.
- Use the frequency table to draw a bar graph.
- Calculate the relative frequency for each city and draw a circle graph.
[frequency ... Häufigkeit; bar graph - Säulendiagramm; circle graph, pie chart ... Kreisdiagramm]

5.3 The pie chart shows which age groups use online banking.

- How many people were interviewed?
- Which age group is the mode?
- How many percent of the people under 39 use online banking?
- Which age group makes up the lowest percentage of online banking customers?

[mode ... Modus; respondent ... Befragte(r)]



800 respondents

5.4 A group of students runs a 200 m race. The following grouped frequency table gives information about the times of all the students.

Time (in t seconds)	Frequency
$23 \leq t < 22.5$	14
$22.5 \leq t < 22$	9
$22 \leq t < 21.5$	6
$21.5 \leq t < 21$	4
$21 \leq t < 20.5$	1

- Work out the total number of students.
- Give the number of students whose time was less than 21 seconds.
- Give the number of students whose times was more than 22 seconds.

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5.5 Five trainees work in a company. The table shows their earnings last month.

Bob	721 €
Simon	768 €
Julia	810 €
Emily	763 €
Steven	805 €

- Work out the mean earnings last month.
- Find the median earnings last month.
- Leave out Bob's earnings and work out for the remaining four trainees their mean earnings and their median earnings.

[mean ... Mittelwert; earnings ... Verdienst]

5.6 The number of visitors of an art gallery is summarized in the following table.

Month	March	April	May	June
Visitors	1496	2004	1824	1907

- Calculate the arithmetic mean and range.
- Calculate the variance, standard deviation and coefficient of variation.

[arithmetic mean ... arithmetisches Mittel; range ... Spannweite; variance ... Varianz; standard deviation ... Standardabweichung; coefficient of variation ... Variationskoeffizient]

5.7 The ages of new members of a golf club are shown in the following table.

- Give the range of their ages.
- Give the lower and upper quartile of their ages.

[lower/upper quartile ... 1./3. Quartil]

Age in years	Frequency
58	4
59	13
60	9
61	32
62	6
63	8
64	24
65	18

5.8 The times in minutes taken by 18 students to do their physics homework are listed below.

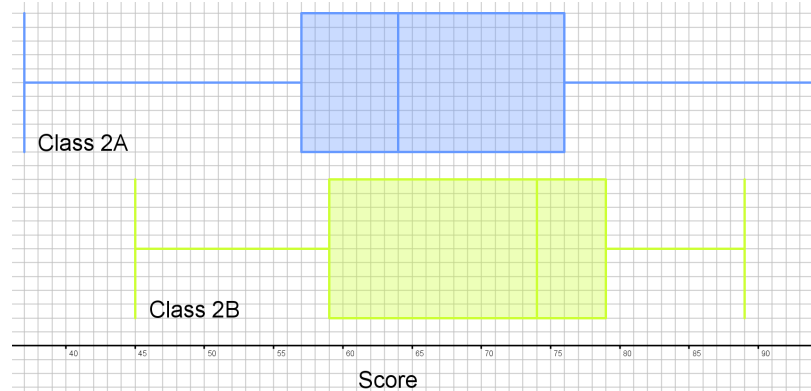
13 14 14 16 16 17 18 18 18 19 19 21 21 22 23 24 28 35

- Give the median.
- Give the lower and upper quartile of their time.
- Draw a box plot for this data.

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- 5.9** Mr Smith gave his students in the classes 2A and 2B the same test (maximum score: 100 points). The students' results were used to draw the following box plots.



- In which of the two classes was the student who scored the most points?
 - In which of the two classes did the students perform better in Mr Smith's test? Give a reason for your answer.
- 5.10** In the following table the outdoors temperature, in °C, at 2 p.m. on 5 days and the number of iced coffees sold at an ice cream parlour on each of those days are shown.

temperature at 2 p.m.	28	22	26	30	33
number of iced coffees	25	16	20	28	35

- Work out the equation of the regression line.
- Estimate the number of iced coffees sold on a day with 35°C at 2 p.m.
- Estimate the outdoors temperature when 30 iced coffees were sold.