EoS - E-tutorial 01 - WiSe 2023/2024

StatRef.A.2.1.00011 (60 Punkte)

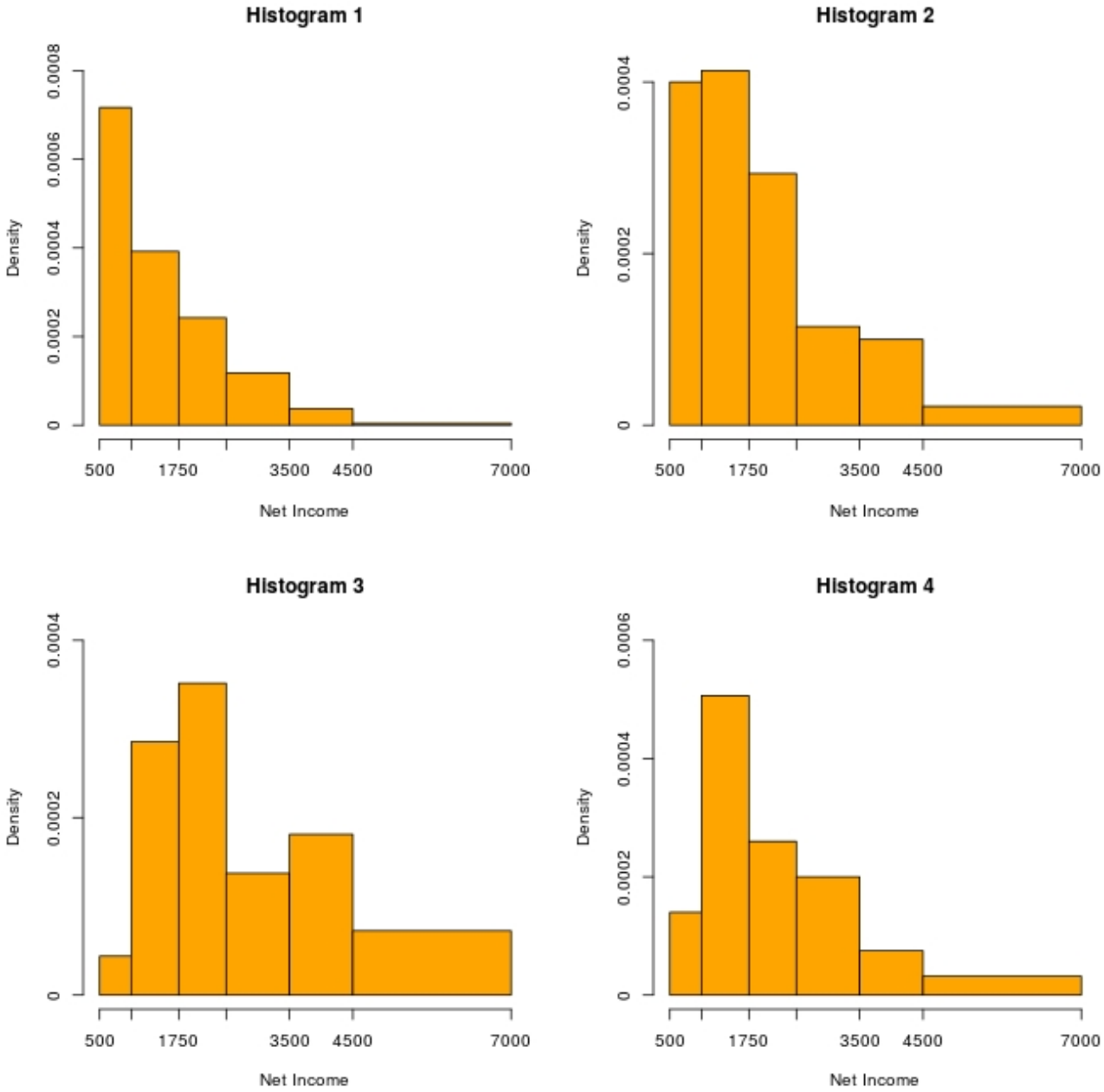
Sie haben die folgende Antwort gegeben:

The student Paula is supposed to investigate the income distribution of her home village Nittel. To this end, she asks 200 people in her village to state their monthly net income. In order to be able to illustrate the gathered data more properly, Paula wants to divide it into six classes. The results of the survey are contained in the dataset that you find below the figure. Assist Paula in the classification and analysis of the data. First download the dataset and load it into R. Classify the income information according to the following table (where t.u. is till under, i.e. the respective interval is open on the right):

Hint 1: Please round your results - if needed and not demanded otherwise - to **four** decimal places.

Hint 2: You may find the R function **cut** quite handy.

j	Net income in Euro
1	500 t.u. 1000
2	1000 t.u. 1750
3	1750 t.u. 2500
4	2500 t.u. 3500
5	3500 t.u. 4500
6	4500 t.u. 7000



il_qst_32646

il_qst_32646.RData (1.71 KB)

a) (20 points) Calculate the **approximate** arithmetic mean for the income in Paula's village by using the classified data. 2105

b) (26 points) Now calculate the **approximate** variance for classified data. 1714444

c) (14 points) Illustrate the income distribution by means of a histogram and compare it to those four histograms in the figure above. Which of the four histograms matches your histogram? Histogram 2

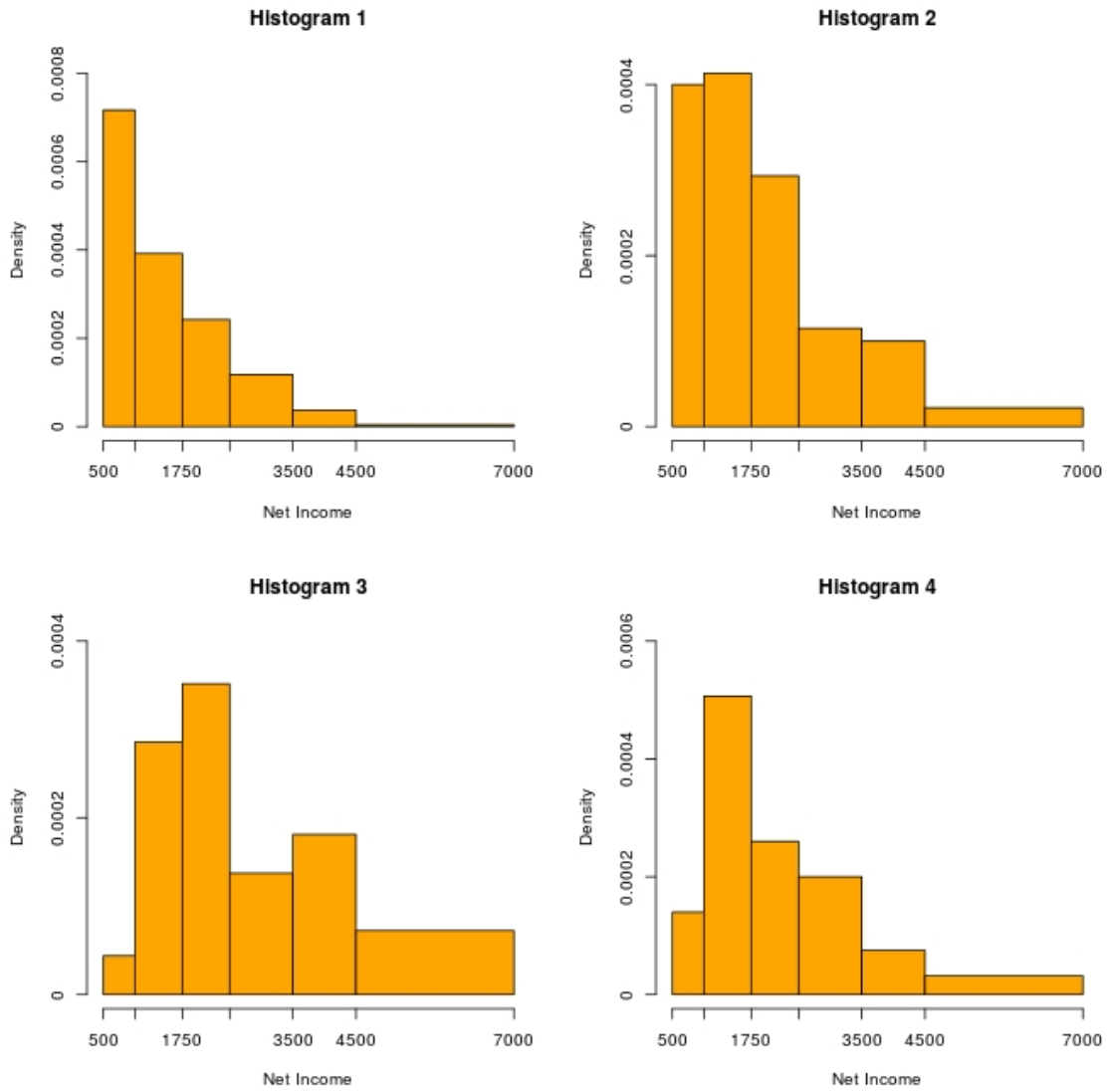
Die bestmögliche Lösung lautet:

The student Paula is supposed to investigate the income distribution of her home village Nittel. To this end, she asks 200 people in her village to state their monthly net income. In order to be able to illustrate the gathered data more properly, Paula wants to divide it into six classes. The results of the survey are contained in the dataset that you find below the figure. Assist Paula in the classification and analysis of the data. First download the dataset and load it into R. Classify the income information according to the following table (where t.u. is till under, i.e. the respective interval is open on the right):

Hint 1: Please round your results - if needed and not demanded otherwise - to **four** decimal places.

Hint 2: You may find the R function **cut** quite handy.

j	Net income in Euro
1	500 t.u. 1000
2	1000 t.u. 1750
3	1750 t.u. 2500
4	2500 t.u. 3500
5	3500 t.u. 4500
6	4500 t.u. 7000



il_qst_32646

il_qst_32646.RData (1.71 KB)

a) (20 points) Calculate the **approximate** arithmetic mean for the income in Paula's village by using the classified data. 2105

b) (26 points) Now calculate the **approximate** variance for classified data. 1714443.75

c) (14 points) Illustrate the income distribution by means of a histogram and compare it to those four histograms in the figure above. Which of the four histograms matches your histogram? Histogram 2

Sie haben 60 von 60 möglichen Punkten erreicht.