FREQUENCY DISPLAYS HOMEWORK

TEXT: 1.3, 2.2

LAST NAME	FIRST NAME	DATE

Consider a sample of apples:

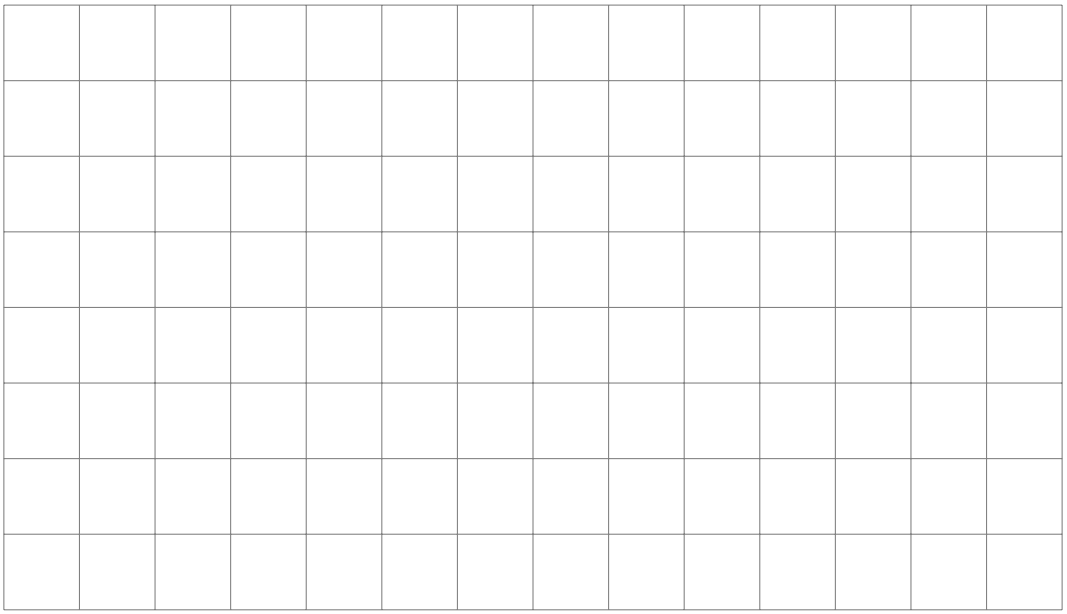
Macoun	Gala	Lady	Lady	Gala	Macoun
Macoun	Macoun	Gala	Macoun	Mutsu	Gala
Mutsu	Mutsu	Gala	Macoun	Gala	Gala

1. Find the mode for this sample, which is the category with the highest frequency.

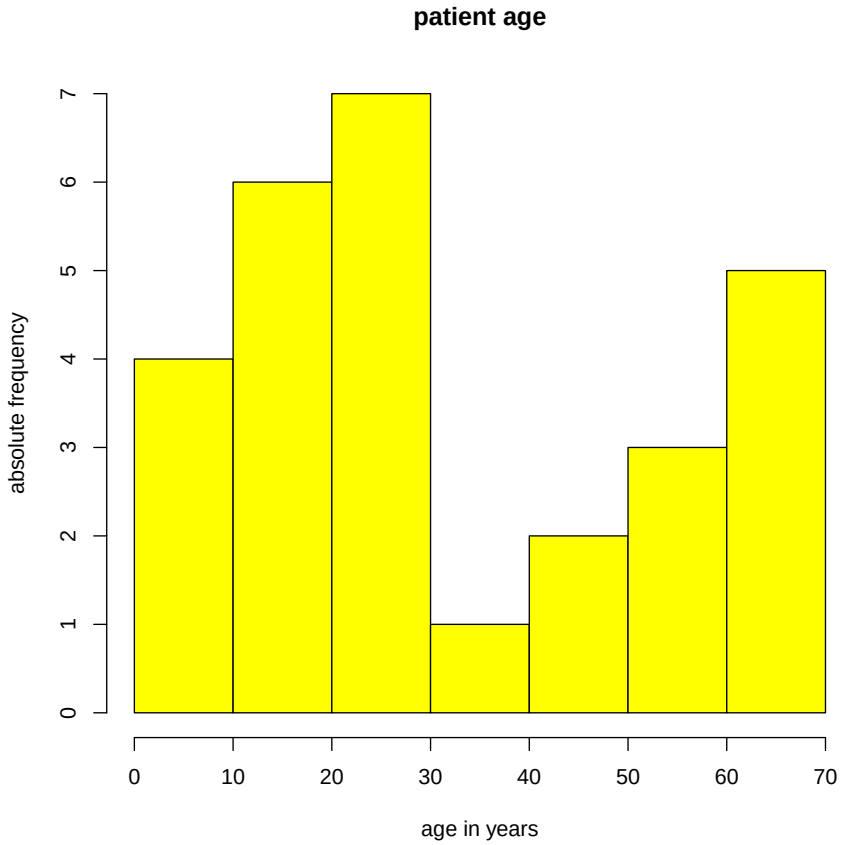
2. Construct the absolute frequency distribution for the sample.

3. Construct the relative frequency distribution for the sample.

4. Construct a relative frequency Pareto chart for the sample.



Consider a histogram for a sample of people of size $n = 28$.



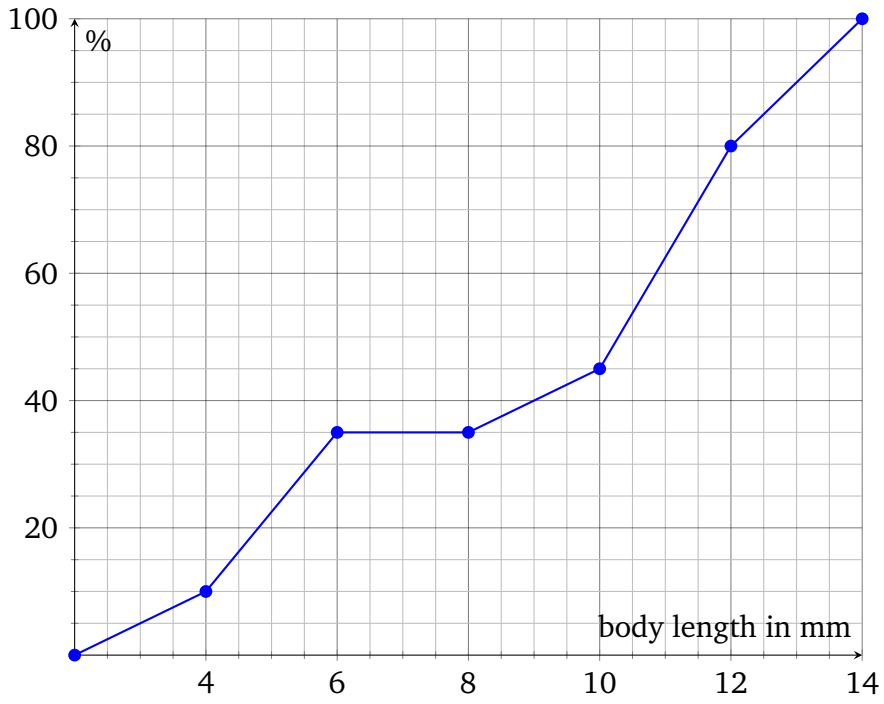
5. What proportion of people in the sample are older than 40?

6. How many people in the sample are between 10 and 50 years old?

7. Would a randomly chosen individual be more likely to be older or younger than 30?

8. What are the typical ages in this sample? Try also to estimate the average age.

The following display is a cumulative relative frequency ogive for a sample of Black Widow spiders, with body length in millimeters on the horizontal axis.



9. What proportion of spiders in the sample has body length of 10 mm or less?

10. What proportion of spiders in the sample has body length of 12 mm or more?

11. What proportion of spiders in the sample has body length between 6 and 8 mm?

12. What proportion of spiders in the sample has body length between 4 and 12 mm?

Consider the following frequency distribution of pulse rates:

Pulse Rates	Frequency	Cumulative Frequency
(60,70]	12	
(70,80]	14	
(80,90]	11	
(90,100]	1	
(100,110]	1	
(110,120]	0	
(120,130]	1	

13. Fill out the cumulative frequency in the table above.

14. Construct a histogram for the pulse rate data.

15. Construct a cumulative frequency ogive for the pulse rate data.

Consider the following cumulative relative frequency distribution of building heights:

Building Height in feet	Relative Frequency	Cumulative Relative Frequency
(10,30]		0.04
(30,50]		0.35
(50,70]		0.88
(70,90]		0.93
(90,110]		1.00

16. Fill out the relative frequency in the table above.

17. Construct a histogram for the building height data.

18. Construct a cumulative relative frequency ogive for the building height data.

Recall that you can sort a dataset `d` in R with `sort(d)`

19. Construct a cumulative relative frequency ogive for the `nhtemp` dataset.
Use at least 5 classes.

20. Construct a cumulative relative frequency ogive for the `trees$Volume` dataset.
Use at least 5 classes.

21. Construct a cumulative relative frequency ogive for the `faithful$eruptions` dataset. Use at least 5 classes.

22. Construct a cumulative relative frequency ogive for the `faithful$waiting` dataset. Use at least 5 classes.

ANSWERS

1. The mode is Gala, with frequency 7.

3. Relative frequency distribution:

Macoun	Gala	Lady	Mutsu
33.33%	38.88%	11.11%	16.66%

5. 35.71%

7. Younger than 30.

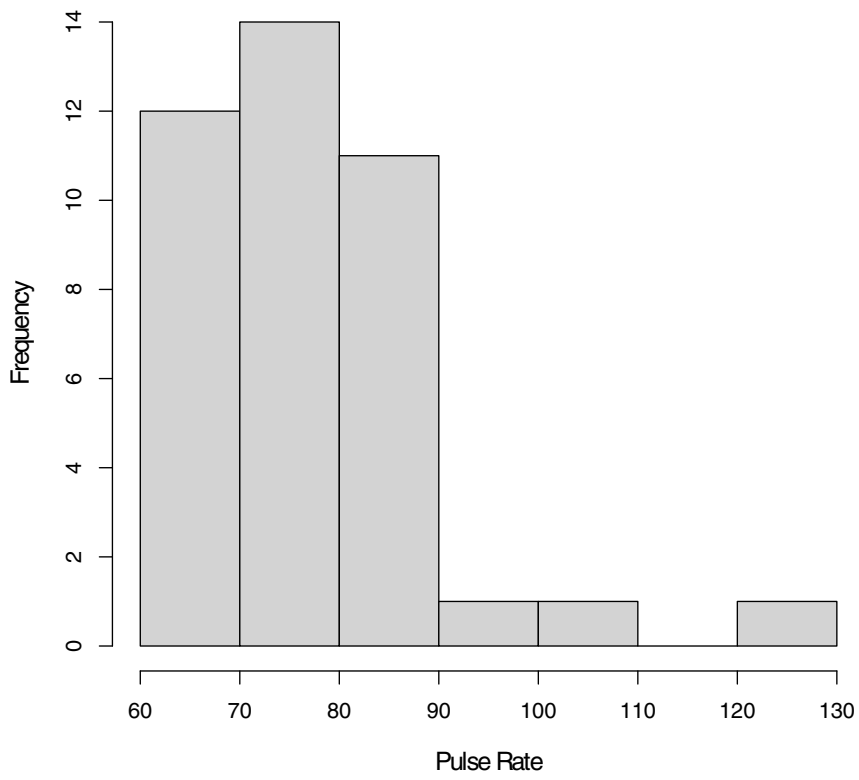
9. 45%

11. 0%

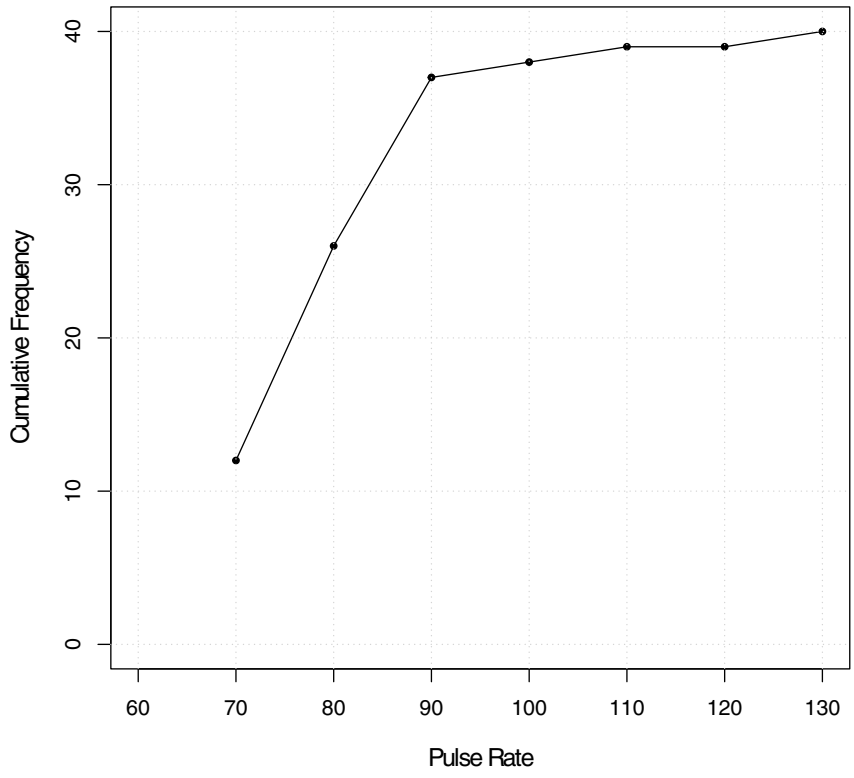
13. Cumulative frequency distribution:

Pulse Rates	Cumulative Frequency
(60,70]	12
(70,80]	26
(80,90]	37
(90,100]	38
(100,110]	39
(110,120]	39
(120,130]	40

14.


Frequency
0
2
4
6
8
10
12
14
60
70
80
90
100
110
120
130
Pulse Rate

15.


Cumulative Frequency
0
10
20
30
40
60
70
80
90
100
110
120
130
Pulse Rate