

NAME

Time:



Calculator Questions



- 1 Emma is going to carry out a survey on the lengths of time people spend using a social media site.
She decides to survey the first 20 students to walk through the school gate on Monday morning.
Give two reasons why this may not produce a good sample.

(2 marks)

- 3 The table shows information about the heights, in centimetres, of 40 students.

| Height (h cm) | Frequency |
|--------------------|-----------|
| $140 < h \leq 150$ | 1 |
| $150 < h \leq 160$ | 7 |
| $160 < h \leq 170$ | 17 |
| $170 < h \leq 180$ | 12 |
| $180 < h \leq 190$ | 3 |



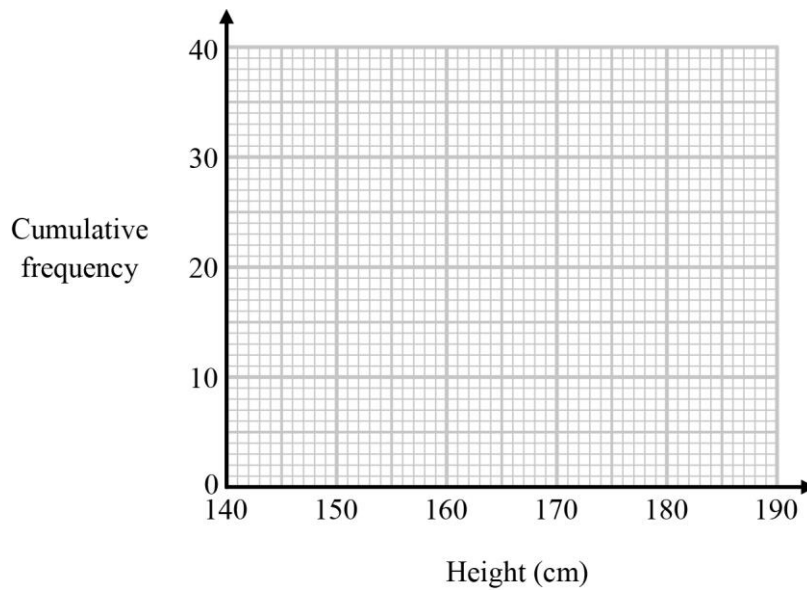
- 3a Complete the cumulative frequency table for this information.

| Height (h cm) | Cumulative Frequency |
|--------------------|----------------------|
| $140 < h \leq 150$ | 1 |
| $140 < h \leq 160$ | |
| $140 < h \leq 170$ | |
| $140 < h \leq 180$ | |
| $140 < h \leq 190$ | |

(1 mark)



3b On the grid, draw a cumulative frequency graph for your table.



(2 marks)



3c Use your graph to find an estimate for the median height of these students.

(1 mark)

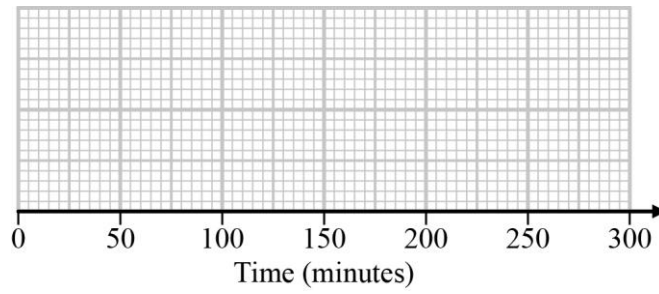
5 The students in a class kept a record of the amount of time, in minutes, they spent watching television last week.

The table shows information about the amount of time the girls spent watching television last week.

| | Minutes |
|----------------------|---------|
| Least amount of time | 30 |
| Range | 200 |
| Median | 180 |
| Lower quartile | 160 |
| Upper quartile | 220 |

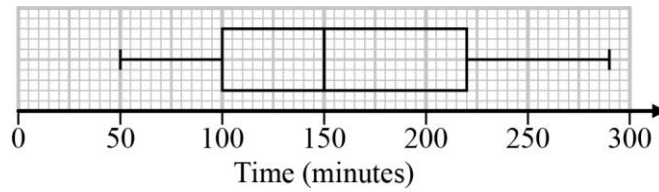


5a On the grid below, draw a box plot for the information in the table.



(2 marks)

The box plot below shows information about the amount of time the boys spent watching television last week.



b Compare the amount of time the girls spent watching television with the amount of time the boys spent watching television last week.

(2 marks)



7 The age at which 19 individuals started to need reading glasses is recorded for a small village.

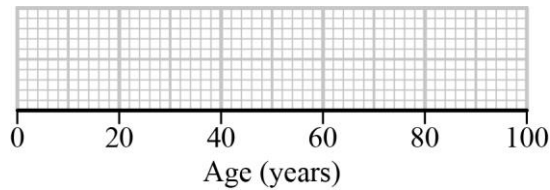
71, 37, 79, 58, 11, 81, 83,

65, 52, 92, 75, 76, 80,

45, 29, 78, 71, 73, 78



On the grid, draw a box plot for this information.

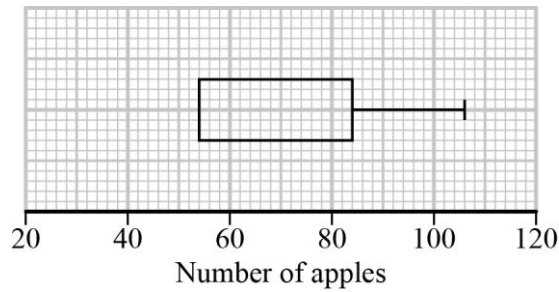


(3 marks)



- 9 Almira recorded the number of apples on each of 80 apple trees.
The incomplete table and box plot give information about her results.

| | Number of apples |
|------------------------|------------------|
| Smallest number | 23 |
| Lower quartile | |
| Median | 73 |
| Upper quartile | 84 |
| Greatest number | |



- a Use the information in the table to complete the box plot and use the information in the box plot to complete the table.

(3 marks)

Some of these 80 apple trees have 54 or more apples on them.

- b Find an estimate for the number of apple trees with 54 or more apples on them.

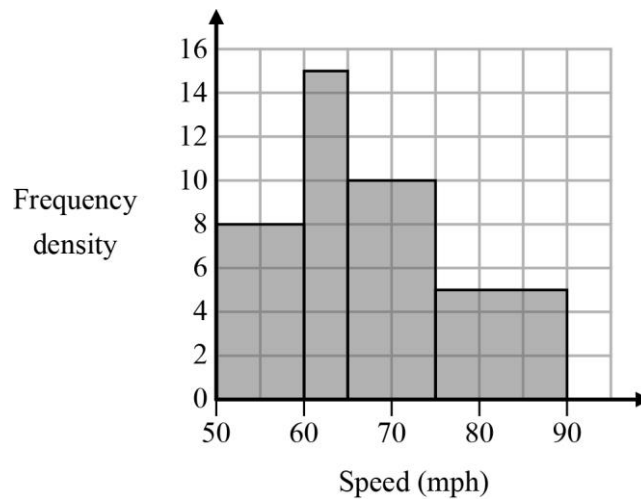
(2 marks)



- 11 Harry recorded the speed of vehicles on a motorway.
The table shows information about the results.

| Speed (s mph) | Frequency |
|------------------|-----------|
| $50 < s \leq 60$ | 8 |
| $60 < s \leq 70$ | 15 |
| $70 < s \leq 75$ | 10 |
| $75 < s \leq 90$ | 5 |

Harry made some mistakes when he drew a histogram for this information.



Write down **two** mistakes Harry made.

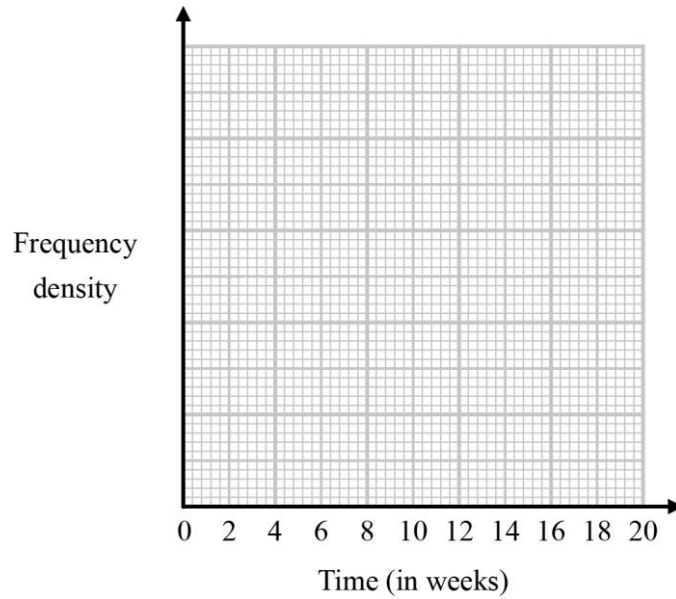
(2 marks)



13 The table shows information about the waiting times in a hospital during April.

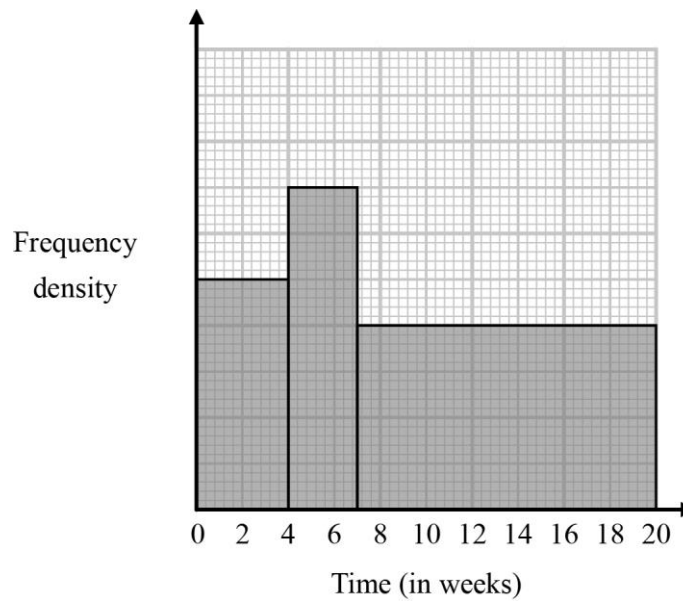
| Waiting time (w weeks) | Frequency |
|------------------------------|-----------|
| $0 < w \leq 4$ | 12 |
| $4 < w \leq 7$ | 30 |
| $7 < w \leq 12$ | 40 |
| $12 < w \leq 20$ | 4 |

a Draw a histogram below for the information given in the table.



(3 marks)

The histogram below shows information about the waiting times in the hospital during October.



20 patients had waiting times of up to 4 weeks.

Sarah says:

‘A greater number of patients had waiting times of more than 7 weeks in April than of more than 7 weeks in October.’

b Is Sarah correct?

You must explain your answer.

(2 marks)

| | |
|--------------|-----|
| Overall mark | /50 |
|--------------|-----|