

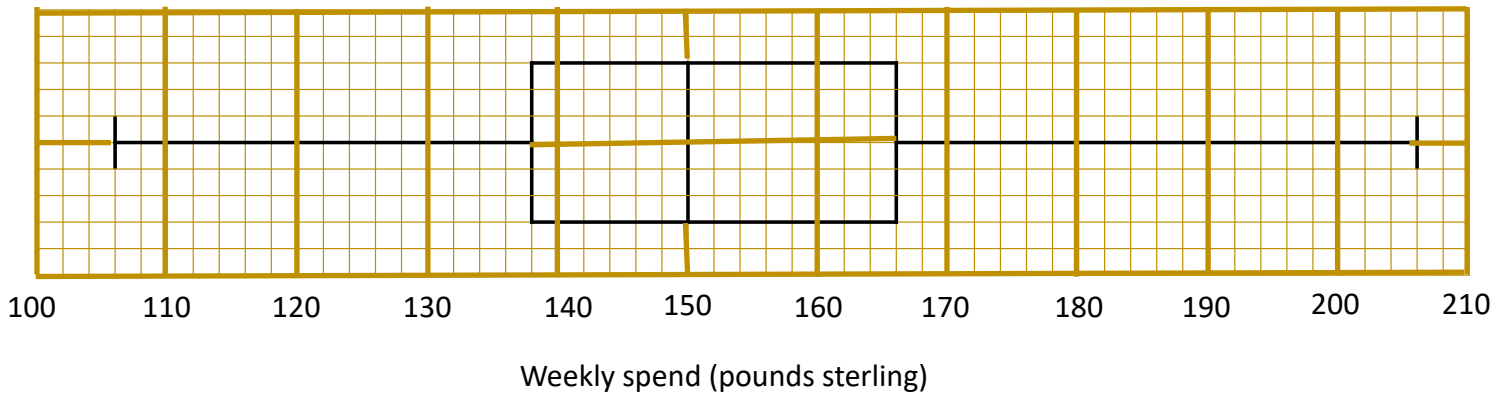
## CN4004 Maths for Computing: Tutorial

### Introduction to statistics

1. Consider the following data set: 1, 2, 3, 3, 4, 4, 4, 6, 8, 8, 10, 11, 11

Calculate:      a) The mean                      b) The mode                      c) The median  
                    d) The range                      e) The interquartile range

2. A survey is conducted on a number of similar households to find how much they spend per week on food. The results are summarised in a box plot, as shown.



Give the value of:

- |                               |                                |
|-------------------------------|--------------------------------|
| a) The lowest value recorded. | b) The highest value recorded. |
| c) The range.                 | d) The median.                 |
| e) The lower quartile         | f) The upper quartile          |
| g) The interquartile range.   |                                |

3. A group of 75 UK students were surveyed to find out how many (if any) GCSE exams they had passed. The results are shown in the table on the right.

Number of GCSE passes, $n$	Frequency $f$
0	1
1	2
2	2
3	5
4	7
5	9
6	10
7	14
8	12
9	8
10	5
<b>Total</b>	<b>75</b>

From the table find the following:

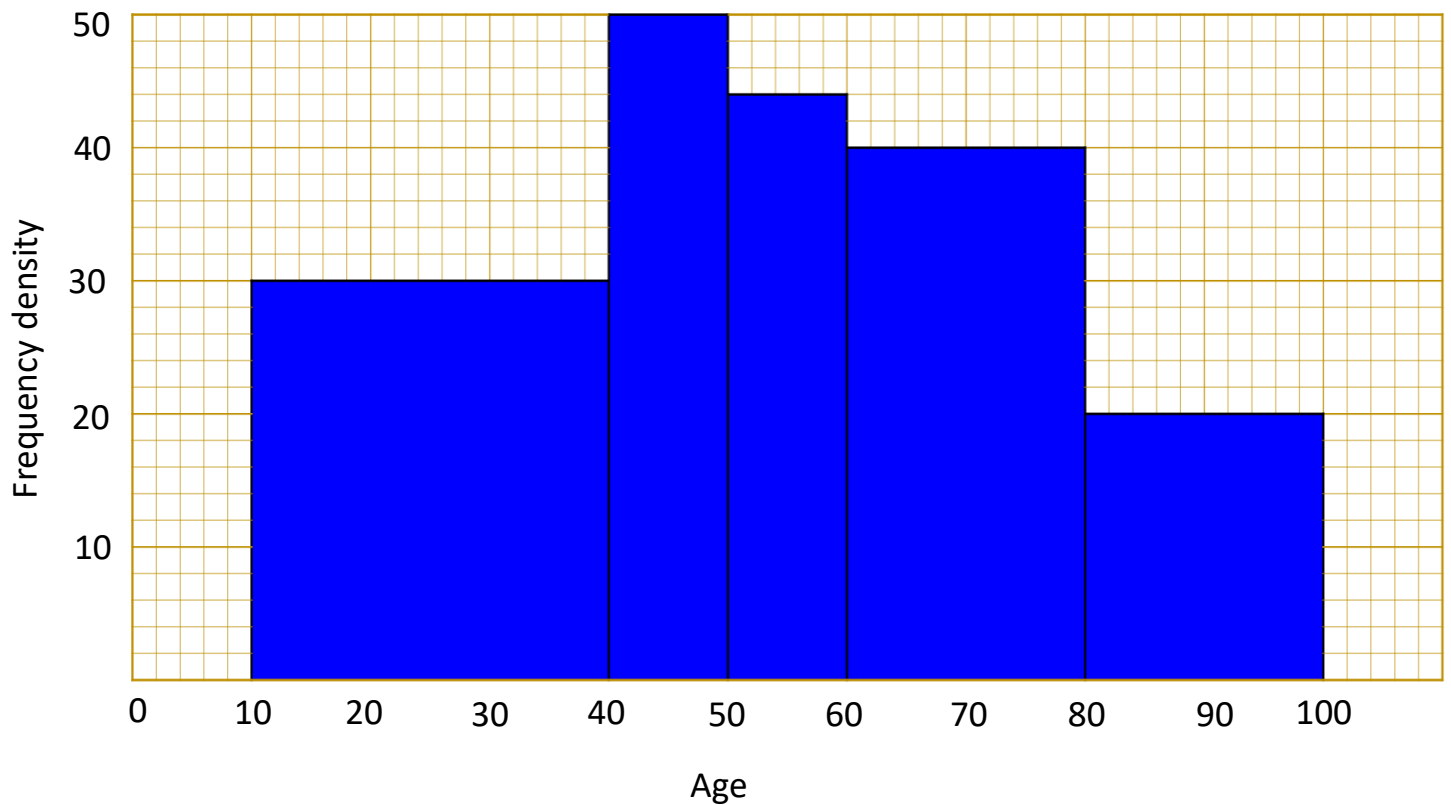
- a) The mean
- b) The mode
- c) The median
- d) The interquartile range

4. 100 students were given an IQ test. The results are summarised in the table on the right.

- a) Find the mean IQ of this group.
- b) What is the modal group?
- c) What is the median group?

IQ	Frequency, $f$
$85 \leq n < 90$	3
$90 \leq n < 95$	12
$95 \leq n < 100$	26
$100 \leq n < 105$	22
$105 \leq n < 110$	19
$110 \leq n < 115$	8
$115 \leq n < 120$	5
$120 \leq n < 125$	3
$125 \leq n < 130$	2
<b>Total</b>	<b>100</b>

5. A survey was undertaken to find out the ages of people (from 10 onwards) visiting a particular museum over the bank holiday period. A histogram was produced, and is shown below.



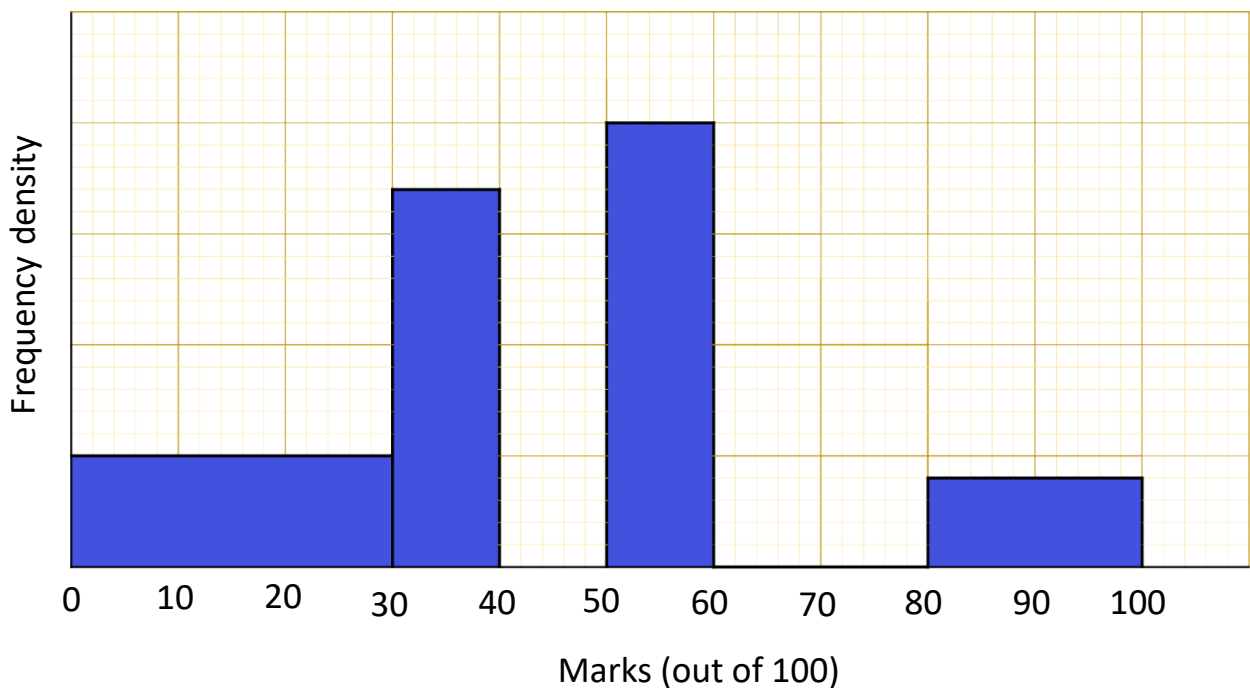
- a) How many visitors were there in the age range of  $60 \leq n < 80$ ?
- b) In which range was there a total of 900 visitors? Explain your answer.

## Harder Questions

6. A class of 190 students took an examination. The results were entered into a table and a histogram was produced. Incomplete versions of the table and histogram are show here.

- Work out the scale of the vertical axis and show this on the table.
- Complete the table and histogram.

Marks, $x$	Frequency, $f$
$0 \leq x < 30$	
$30 \leq x < 40$	34
$40 \leq x < 50$	38
$50 \leq x < 60$	
$60 \leq x < 80$	32
$80 \leq x \leq 100$	



- Draw a bar chart to represent the information in question 3.
- Draw a frequency polygon to represent the data in question 4.

### **Advanced Question**

9. Using formulae, estimate the median and the mode of the data shown in question 4.