

1. The temperatures in  $^{\circ}\text{C}$ , at midday in Geneva, were measured for eight days and the results are recorded below.

7, 4, 5, 4, 8,  $T$ , 14, 4

The mean temperature was found to be  $7^{\circ}\text{C}$ .

- (a) Find the value of  $T$ . (3)
- (b) Write down the mode. (1)
- (c) Find the median. (2)

(Total 6 marks)

2. 80 matches were played in a football tournament. The following table shows the number of goals scored in all matches.

<b>Number of goals</b>	0	1	2	3	4	5
<b>Number of matches</b>	16	22	19	17	1	5

- (a) Find the mean number of goals scored per match. (2)
- (b) Find the median number of goals scored per match. (2)

A local newspaper claims that the mean number of goals scored per match is two.

- (c) Calculate the percentage error in the local newspaper's claim. (2)
- (Total 6 marks)

3. 31 pupils in a class were asked to estimate the number of sweets in a jar. The following stem and leaf diagram gives their estimates.

Stem	Leaf
4	2, 4, 7, 8, 9
5	1, 1, 2, 3, 8, 9
6	0, 2, 2, 4, 6, 6, 7, 8, 8
7	0, 0, 1, 3, 4, 5, 5, 7
8	1, 2, 2

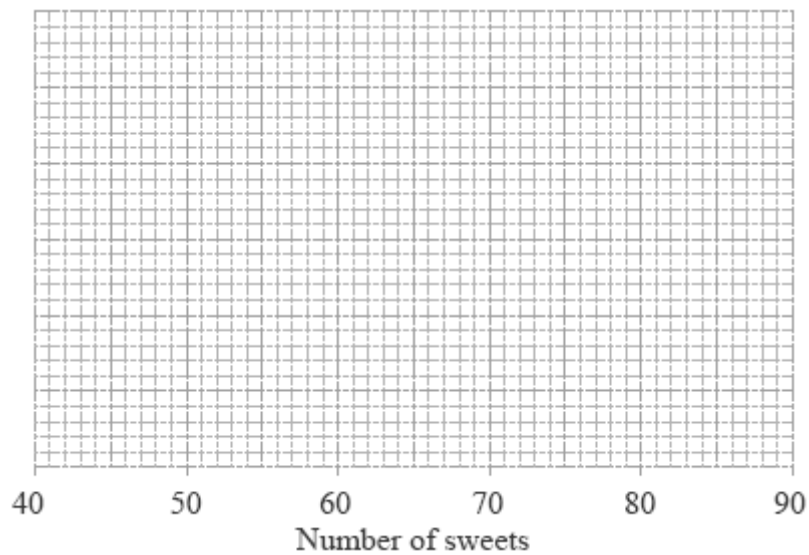
**Key: 4 | 7 represents 47 sweets**

- (a) For the pupils' estimates, write down

- (i) the median;
- (ii) the lower quartile;
- (iii) the upper quartile.

(3)

- (b) Draw a box and whisker plot of the pupils' estimates using the grid below.



(3)

(Total 6 marks)

4. Eight houses in a street are inhabited by different numbers of people, as shown in the table below.

House	A	B	C	D	E	F	G	H
Number of inhabitants	5	4	7	6	4	3	6	4

- (a) The following statements refer to the number of inhabitants per house. Write down true (T) or false (F) for each.

- (i) The mean is 5.
- (ii) The range is 4.
- (iii) The mode is 6.
- (iv) The standard deviation is 1.4 correct to 2 significant figures.

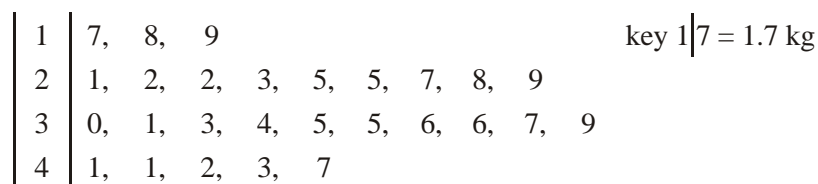
(4)

- (b) Calculate the interquartile range for the number of inhabitants per house.

(2)

(Total 6 marks)

5. The birth weights, in kilograms, of 27 babies are given in the diagram below.



- (a) Calculate the mean birth weight.

(2)

- (b) Write down:

- (i) the median weight;

(1)

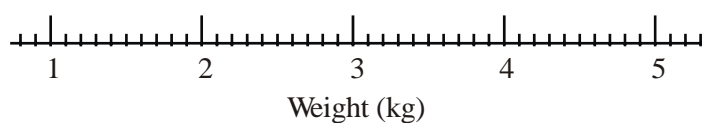
- (ii) the upper quartile.

(1)

The lower quartile is 2.3 kg.

- (c) On the scale below draw a box and whisker diagram to represent the birth weights.

(2)



(Total 6 marks)

6. The mean of the ten numbers listed below is 6.8.

$$8, 5, 5, 10, 8, 4, 9, 7, p, q$$

- (a) Write down an equation in terms of  $p$  and  $q$ .

(2)

The mode of these ten numbers is five and  $p$  is less than  $q$ .

- (b) Write down the value of

(i)  $p$ ;

(ii)  $q$ .

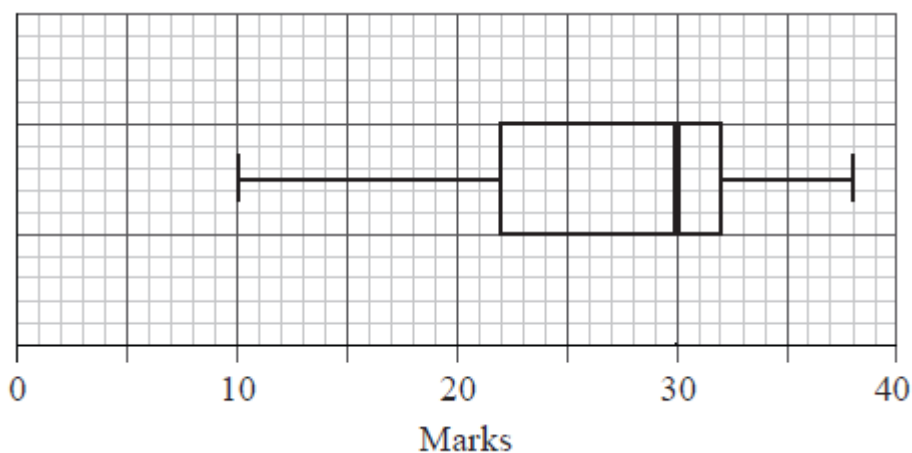
(2)

- (c) Find the median of the ten numbers.

(2)

**(Total 6 marks)**

7. 56 students were given a test out of 40 marks. The teacher used the following box and whisker plot to represent the marks of the students.



- (a) Write down

(i) the median mark;

(ii) the 75<sup>th</sup> percentile mark;

(iii) the range of marks.

(4)

- (b) Estimate the number of students who achieved a mark greater than 32.

(2)

**(Total 6 marks)**

8. A random sample of 167 people who own mobile phones was used to collect data on the amount of time they spent per day using their phones. The results are displayed in the table below.

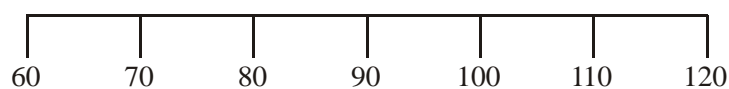
Time spent per day ( $t$ minutes)	$0 \leq t < 15$	$15 \leq t < 30$	$30 \leq t < 45$	$45 \leq t < 60$	$60 \leq t < 75$	$75 \leq t < 90$
Number of people	21	32	35	41	27	11

- (a) State the modal group. (1)
- (b) Use your graphic display calculator to calculate approximate values of the mean and standard deviation of the time spent per day on these mobile phones. (3)
- (c) On graph paper, draw a fully labelled histogram to represent the data. (4)
- (Total 8 marks)**

9. The heights (cm) of seedlings in a sample are shown below.

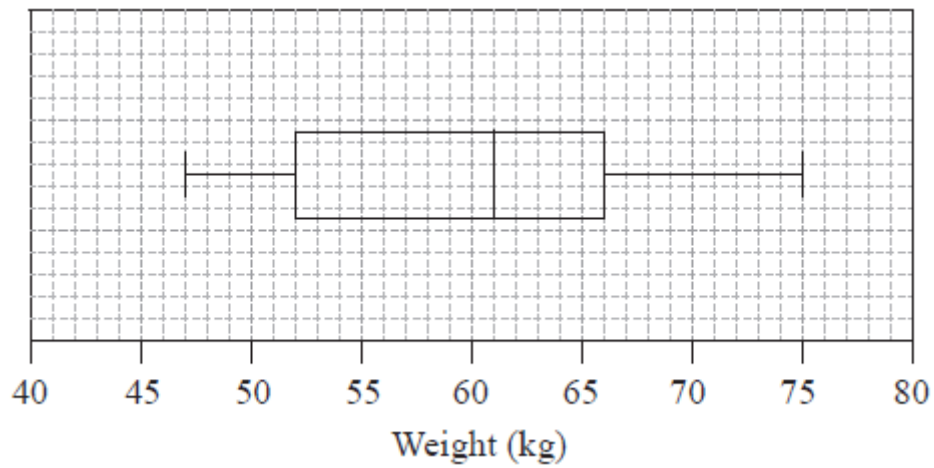
6	3, 7	key 6   3 represents 63 cm
7	2, 5, 8	
8	3, 6, 6, 8, 8	
9	2, 5, 7, 8	
10	3, 6, 6	
11	2, 2	

- (a) State how many seedlings are in the sample.
- (b) Write down the values of
- (i) the median;
  - (ii) the first and third quartile.
- (c) Calculate the range.
- (d) Using the scale below, draw a box and whisker plot for this data.



**(Total 6 marks)**

10. The weights in kg, of 80 adult males, were collected and are summarized in the box and whisker plot shown below.



- (a) Write down the median weight of the males. (1)
- (b) Calculate the interquartile range. (2)
- (c) Estimate the number of males who weigh between 61 kg and 66 kg. (1)
- (d) Estimate the mean weight of the lightest 40 males. (2)
- (Total 6 marks)