

## Stem and Leaf Diagrams

Please write clearly in block capitals

Forename:

Surname:

### Materials

For this paper you must have:

- mathematical instruments



You **can** use a calculator.

### Instructions

- Use black ink or black ball-point pen. Draw diagrams in pencil.
- Fill in the boxes at the top of this page.
- Answer all questions.
- You must answer the questions in the spaces provided. Do not write outside the box around each page or on blank pages.
- Do all rough work in this book. Cross through any work you do not want to be marked.

### Information

- The marks for questions are shown in brackets.
- You may ask for graph paper, tracing paper and more answer paper. These must be tagged securely to this answer book.

### Advice

- In all calculations, show clearly how you work out your answer.

**1** Here are the heights, in cm, of 20 sunflower plants.

54, 93, 56, 34, 49, 29, 93, 37, 20, 9,

50, 13, 23, 36, 83, 22, 39, 99, 82, 49

**1(a)** Complete the ordered stem and leaf diagram below to represent this information.

**[3 marks]**

0	9
1	3
2	
3	
4	
5	
6	
7	
8	
9	

Chloe says:

“To work out the median, you add together all the numbers, and divide that by how many numbers there are.”

**1(b)** Is she correct? Explain your answer.

**[1 mark]**

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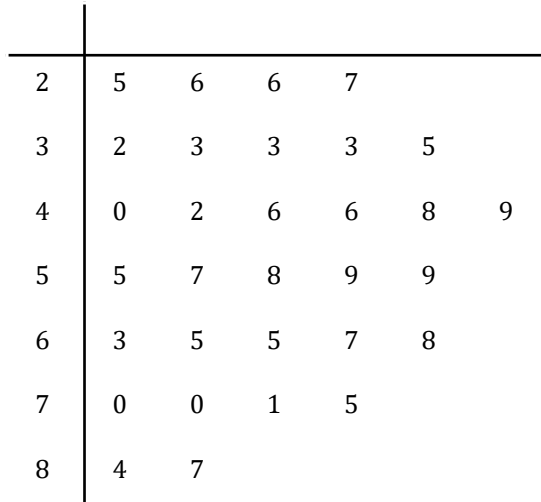
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**Turn over for next question**

- 2** Students in a year 8 class took a Science test.  
The stem and leaf diagram below shows the results.



Key:

2	5	means 25 marks
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- 2(a)** How many pupils are in the class?

[1 mark]

Answer \_\_\_\_\_

- 2(b)** Find the modal mark.

[1 mark]

Answer \_\_\_\_\_

- 2(c)** Find the median mark.

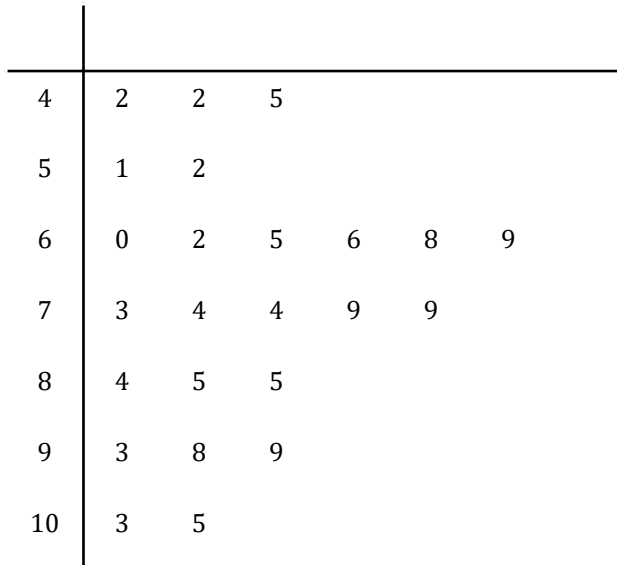
[1 mark]

Answer \_\_\_\_\_

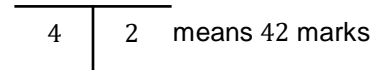
**Turn over for next question**

Turn over ►

**3** The stem and leaf diagram below shows the scores of 24 students in a competition.



Key:



**3(a)** Find the median score.

[1 mark]

\_\_\_\_\_

Answer \_\_\_\_\_

**3(b)** Find the range of scores.

[1 mark]

\_\_\_\_\_

Answer \_\_\_\_\_

**3(c)** What percentage of the students scored 60 or less?

[2 marks]

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Answer \_\_\_\_\_

**Turn over for next question**

- 4** Pupils in a PE lesson were timed to see how fast they could run 100 m.  
The times, in seconds, are shown below.

21, 23, 22.5, 20.7, 19.8, 21.7, 21, 21.3, 20.6, 19.3,

20.8, 17.5, 18.4, 17.4, 22.1, 22, 21.1, 18.2, 16.4, 19.8

- 4(a)** Draw an ordered stem and leaf diagram to represent this information.  
Include a key with your diagram.

**[3 marks]**



- 4(b)** Find the median time.

**[1 mark]**

Answer \_\_\_\_\_

- 4(c)** Afterwards, it was discovered that the time 19.9 seconds had been missed off the original list of data.  
If this piece of data had been included, what effect would it have on the median from part (a)?

Circle the correct statement.

**[1 mark]**

- The median would decrease.                      The median would increase  
The median would stay the same                      The median would decrease by 1

**Turn over for next question**

- 5 The time taken, in minutes, for 20 pupils to get to school was recorded.  
A student was asked to draw an ordered stem and leaf diagram for the data, which is shown below.

0	5	6	6	7				
1	1	3	5	8	9			
2	0	0	0	1	4	3	5	
3	7	8						
4								
5	5							

The student has not drawn the stem and leaf diagram correctly.  
Identify three mistakes the student has made.

[3 marks]

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Turn over for next question

Turn over ►

- 6 The ages of men and women at a bowling club were recorded, and the results are shown below.

	men			
3	1	5	8	9
4	2	2	4	
5	3	1		
6	2			

	women		
3	4	5	
4	5	6	7
5	7	9	9
6	0	2	4
7	2	3	

Key:

3	1	means 31 years
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Compare the distributions of the ages of men and women.

[3 marks]

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**End of Questions**

END