

## GCSE QUESTIONS WITH CLUES

### Q1. NON-CALCULATOR

Jake and Sarah each played a computer game six times.

*range = biggest - smallest*

Their scores for each game are shown below.

Jake	10	9	8	11	12	8
Sarah	2	10	7	14	4	10

(a) Who had the most consistent scores, Jake or Sarah? You must give a reason for your answer.

*smaller range*

*Jake's range:  $12 - 8 = 4$*

*Sarah's range:  $14 - 2 = 12$*

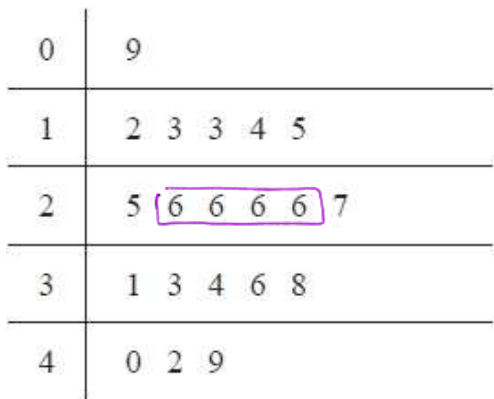
.....

.....

(1)

Jake played a different game 20 times.

The stem and leaf diagram shows information about his scores.



**Key**  
1 | 2 represents 12 points

*most common*

Jake said his modal score was 6 points because 6 occurs most often in the diagram.

(b) Is Jake correct? You must explain your answer.

.....

.....

(1)

(Total for question = 2 marks)

**Q2. NON-CALCULATOR**

The stem and leaf diagram shows information about the heights, in cm, of the boys in a class.

14	0	2	9			
15	1	1	3	5	7	
16	2	4	5	7	8	9
17	6	6	7	9		
18	0	0	1			

Key: 15 | 1 represents 151 cm

(a) Find the median height. *middle value*

..... cm  
(1)

The girls in the class have a median height of 162 cm. Their heights have a range of 45 cm.

(b) Compare the distribution of the heights of the boys with the distribution of the heights of the girls.

*The boys' range is 181-140=41*  
.....  
.....  
.....

(2)  
(Total for question = 3 marks)

**Q3. NON-CALCULATOR**

Here are the ages, in years, of 20 footballers.

- 17 32 25 41 23 26 29 29 32 30  
21 17 40 35 34 28 32 19 27 31

Wayne drew this stem and leaf diagram to show this information.

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

Key: 1 | 7 represents 17 footballers

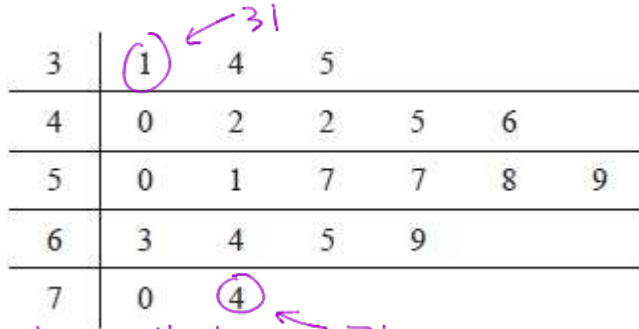
Write down two things that are wrong with the stem and leaf diagram.

- 1 .....  
2 .....

(Total for question = 2 marks)

**Q4. CALCULATOR ALLOWED**

The stem and leaf diagram below gives information about the ages of people in a social club.



Key: 4|2 represents 42 years

biggest - smallest → 74  
Find the range of these ages.

..... years  
(Total for question = 2 marks)

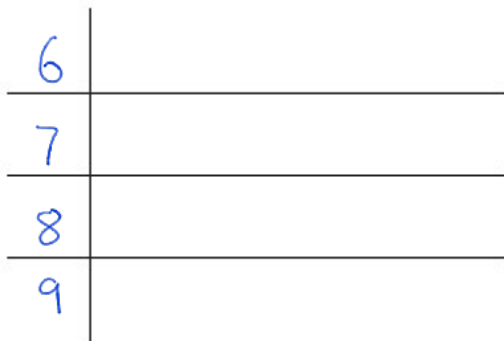
**Q5. CALCULATOR ALLOWED**

Here are the marks 20 students got in a French test.

76	82	84	69	80	64	70	81	75	91
87	67	80	70	94	76	81	69	71	77

(a) Show this information in a stem and leaf diagram.

Ordered Values: 64 67 69 69 70 70 71 75 76 76  
77 80 80 81 81 82 84 87 91 94



Key:

(3)

One of these students is going to be chosen at random. The pass mark in the French test is 71

Omar writes, The probability that this student failed the French test is  $\frac{1}{4}$

Omar is wrong.

(b) Explain why.

.....  
.....

(2)  
(Total for question = 5 marks)

**Q6. CALCULATOR ALLOWED**

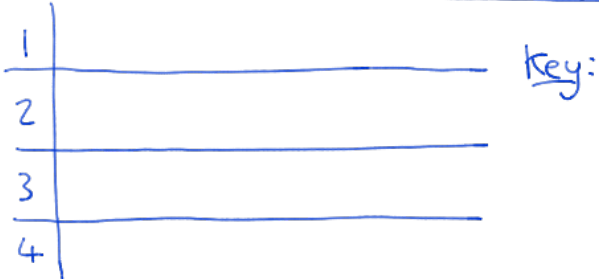
Here are the speeds, in kilometres per hour, of 15 cyclists.

16	22	34	18	24
22	33	28	19	41
23	25	31	40	23

Ordered values:

16	31
18	33
19	34
22	40
22	41
23	
23	
24	
25	
28	

Show this information in a stem and leaf diagram.



(Total for question = 3 marks)

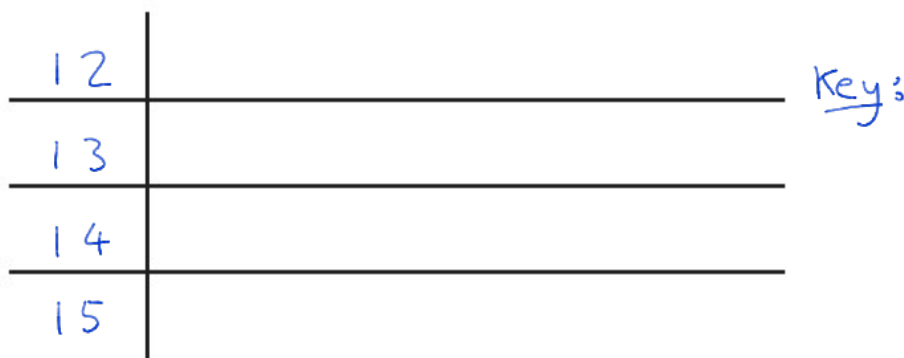
**Q7. CALCULATOR ALLOWED**

Here are the heights, in centimetres, of 15 children.

123	147	135	150	147
129	148	149	125	137
133	138	133	130	151

(a) Show this information in a stem and leaf diagram.

Ordered Values: 123 125 129 130 133 133 135 137 138  
 147 147 148 149 150 151



(3)

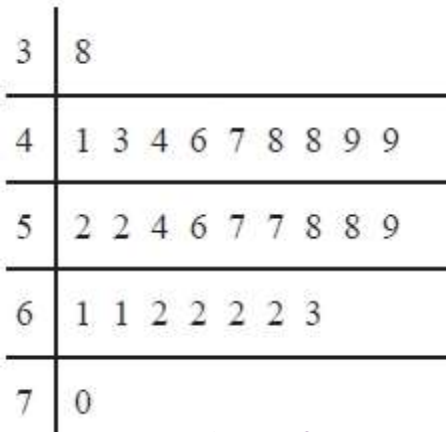
One of the children is chosen at random.

(b) What is the probability that this child has a height greater than 140 cm?

.....  
 (2)  
 (Total for question is 5 marks)

**Q8. CALCULATOR ALLOWED**

The stem and leaf diagram gives information about the speeds of 27 cars.



Key:  
3 | 8 means 38 miles per hour

(a) Find the middle value median speed.

..... miles per hour  
(1)

(b) Work out the biggest-smallest range.

..... miles per hour  
(1)

One of the cars is chosen at random.

Jack says,

"The probability that the speed of this car is more than 60 miles per hour is  $\frac{1}{3}$ "

(c) Jack is wrong.  
Explain why.

.....  
.....

(2)  
(Total for question = 4 marks)

**Q9. CALCULATOR ALLOWED**

The stem and leaf diagram shows information about the heights, in cm, of 23 sunflowers.

17	(3)	4	9				
18	6	8	(8) LQ				
19	0	0	1	4	6	(7) median	8
20	1	4	7	7	(9) UQ	9	
21	4	8	8	(9) maximum			

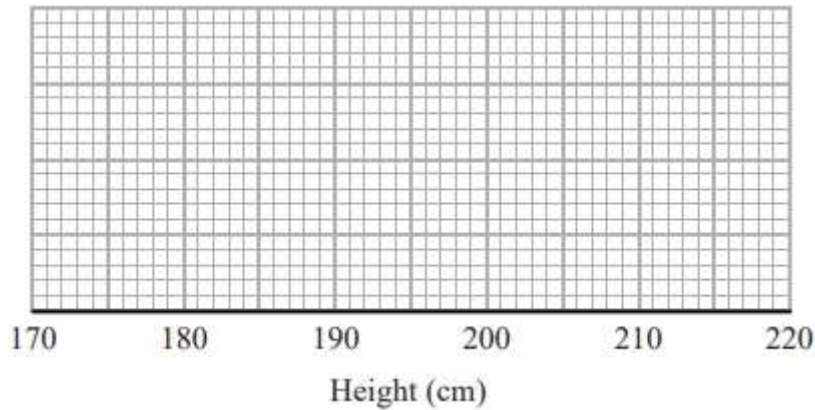
median:  $\frac{n+1}{2} = \frac{24}{2} = 12^{\text{th}}$  value

Key: 17|3 represents 173 cm

LQ:  $\frac{n+1}{4} = 6^{\text{th}}$  value

UQ:  $\frac{3(n+1)}{4} = 18^{\text{th}}$  value

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



(Total for question = 3 marks)