

# P16- Stem and Leaf Diagrams

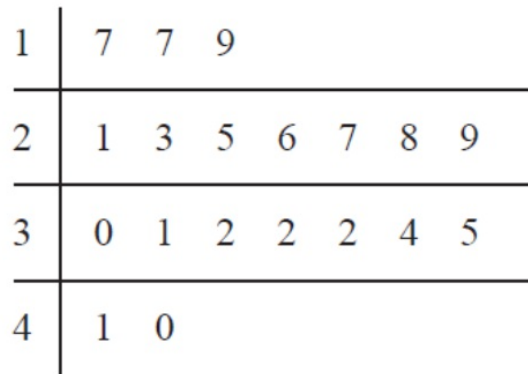
OCR

Edexcel

**16** 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.



Key: 1|7 represents 17 footballers

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

1 .....

2 .....

---

**(Total for Question 16 is 2 marks)**

16 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

ages

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

- 1 40 should come before 41
- 2 Missed an ages. He has 19 in the stem and leaf.

**(Total for Question 16 is 2 marks)**

**12** The stem and leaf diagram gives information about the heights of 25 students.

**P16**

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

Key:

14 | 5 represents 145 cm

(a) Find the median height.

..... cm

(1)

Chloe says that more than 30% of the 25 students have a height greater than 170 cm.

(b) Is Chloe correct?

You must show how you get your answer.

(2)

12 The stem and leaf diagram gives information about the heights of 25 students.

P16

14	<del>5</del> <del>7</del> <del>7</del> <del>9</del>
15	<del>2</del> <del>2</del> <del>3</del> <del>5</del> <del>6</del> <del>8</del>
16	<del>0</del> <del>1</del> <u>4</u> <del>6</del> <del>7</del> <del>8</del> <del>8</del> <del>9</del>
17	<u>1</u> <u>2</u> <u>2</u> <u>6</u> <u>7</u>
18	<u>0</u> <u>3</u>

Key:

14 | 5 represents 145 cm

$$\frac{25+1}{2} = 13^{\text{th}}$$

(a) Find the median height.

164 cm  
(1)

Chloe says that more than 30% of the 25 students have a height greater than 170 cm.

(b) Is Chloe correct?

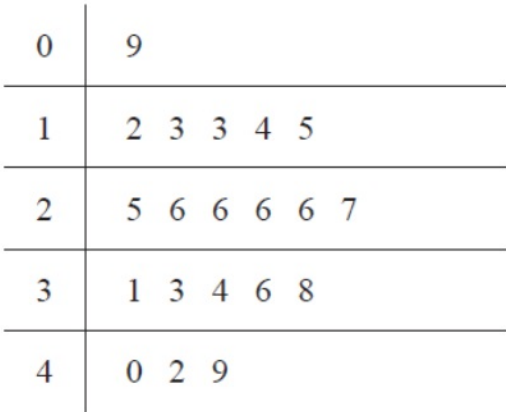
You must show how you get your answer.

$\frac{7}{25}$  more than 170

28%. No chloe is incorrect (2)

Jake played a different game 20 times.

The stem and leaf diagram shows information about his scores.



**Key**  
1 | 2 represents 12 points

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 10 is 2 marks)**



Jake played a different game 20 times.

The stem and leaf diagram shows information about his scores.

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

**Key**  
1 | 2 represents 12 points

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.

No, 26 is the modal score. He forgot the 2' when looking at the 6.

(1)

(Total for Question 10 is 2 marks)

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

Video created by W Neill

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.

P16



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.

P21

(2)

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

Video created by W Neill

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.

P16

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

key  
6|4 = 64 marks

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  $\frac{1}{4}$  failed =  $\frac{6}{20}$   $\frac{6}{20} \neq \frac{5}{20}$

Omar is wrong.

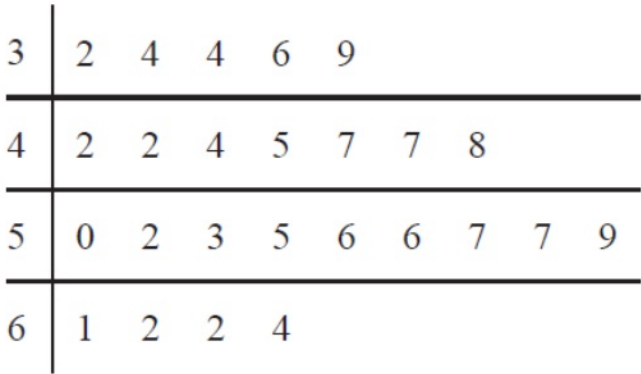
(b) Explain why.

P21

Omar is wrong

9 Here is a stem and leaf diagram for the heights, in mm, of 25 seedlings.

P16  
P34



Key:  
3|2 represents 32 mm

Work out the interquartile range.

..... mm

**(Total for Question 9 is 2 marks)**

9 Here is a stem and leaf diagram for the heights, in mm, of 25 seedlings.

P16  
P34

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

$$\text{IQR} = \text{UQ} - \text{LQ} \\ 57 - 42 = 15 \text{ mm}$$

Key:

3|2 represents 32 mm

Work out the interquartile range.

$$25 + 1 = 26$$

$$\text{LQ} = \frac{1}{4}(26) = 6.5^{\text{th}}$$

$$\text{UQ} = \frac{3}{4}(26) = 19.5^{\text{th}}$$

..... 15 mm ✓

(Total for Question 9 is 2 marks)

AQA