



Aberdare Community School  
Mathematics Department

WJEC GCSE

**Higher – Calculator**

Data

## **Averages - simple**

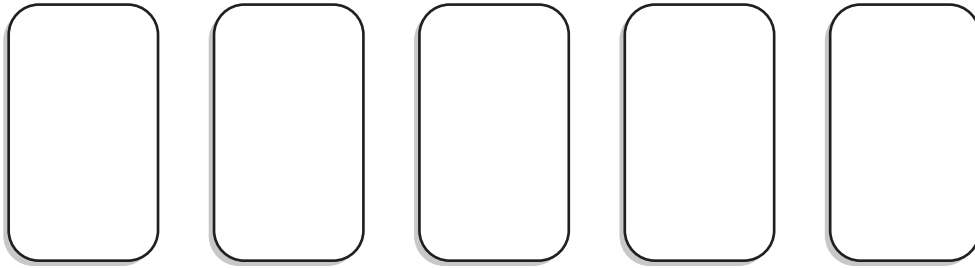
Name: .....

Set: .....

Date: .....

Teacher: .....

9.



A number is written on each of five cards.

The cards are arranged in ascending order.

It is known that the mean of the five numbers is 9.6, the range is 12, the median is 10, the largest number is 16 and the fourth number is twice the second number.

Find the five numbers written on the cards.

.....

.....

.....

.....

.....

.....

[5]

6. A supermarket collects information about varieties of apples. The information is shown in the table below.

|                  | Mean weight | Modal weight | Median weight | Range |
|------------------|-------------|--------------|---------------|-------|
| Royal Gala Apple | 108 g       | 105 g        | 106 g         | 13 g  |
| Pink Lady Apple  | 112 g       | 105 g        | 104 g         | 24 g  |

- (a) A counter display is made using 100 apples. Calculate the approximate mean weight of these 100 apples, given that there are 60 Royal Gala apples and 40 Pink Lady apples.  
**You must show all your working.**

.....

.....

.....

.....

.....

.....

.....

.....

[4]

- (b) To create a display in the entrance hall of the supermarket, one of these varieties of apple is selected. The supermarket wants all the apples it sells to be roughly the same size. Which variety of apple should the supermarket select for the display? You must give a reason for your answer.

.....

.....

.....

.....

.....

[2]

- 4. Farah is 26 years older than her son Amir.  
Their mean age is 30 years.

How old is Farah?

.....

.....

.....

.....

.....

.....

.....

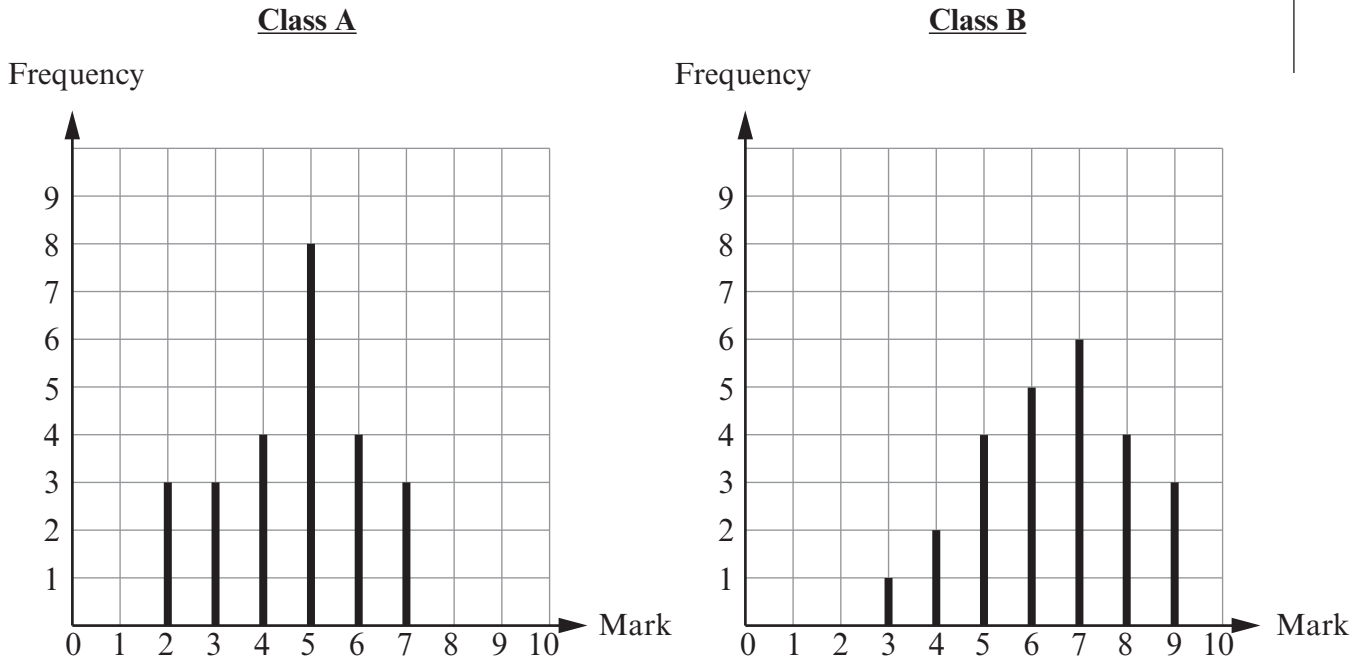
.....

.....

[3]

6. Pupils in Class A and Class B of a school were given a Mathematics test.

The school recorded the marks gained as shown below.



- (a) Which class has the greater range of marks? You must give an explanation for your choice.

.....

.....

.....

[1]

- (b) Without making any calculations, which class has the greater mean mark for the test? You must give an explanation for your choice.

.....

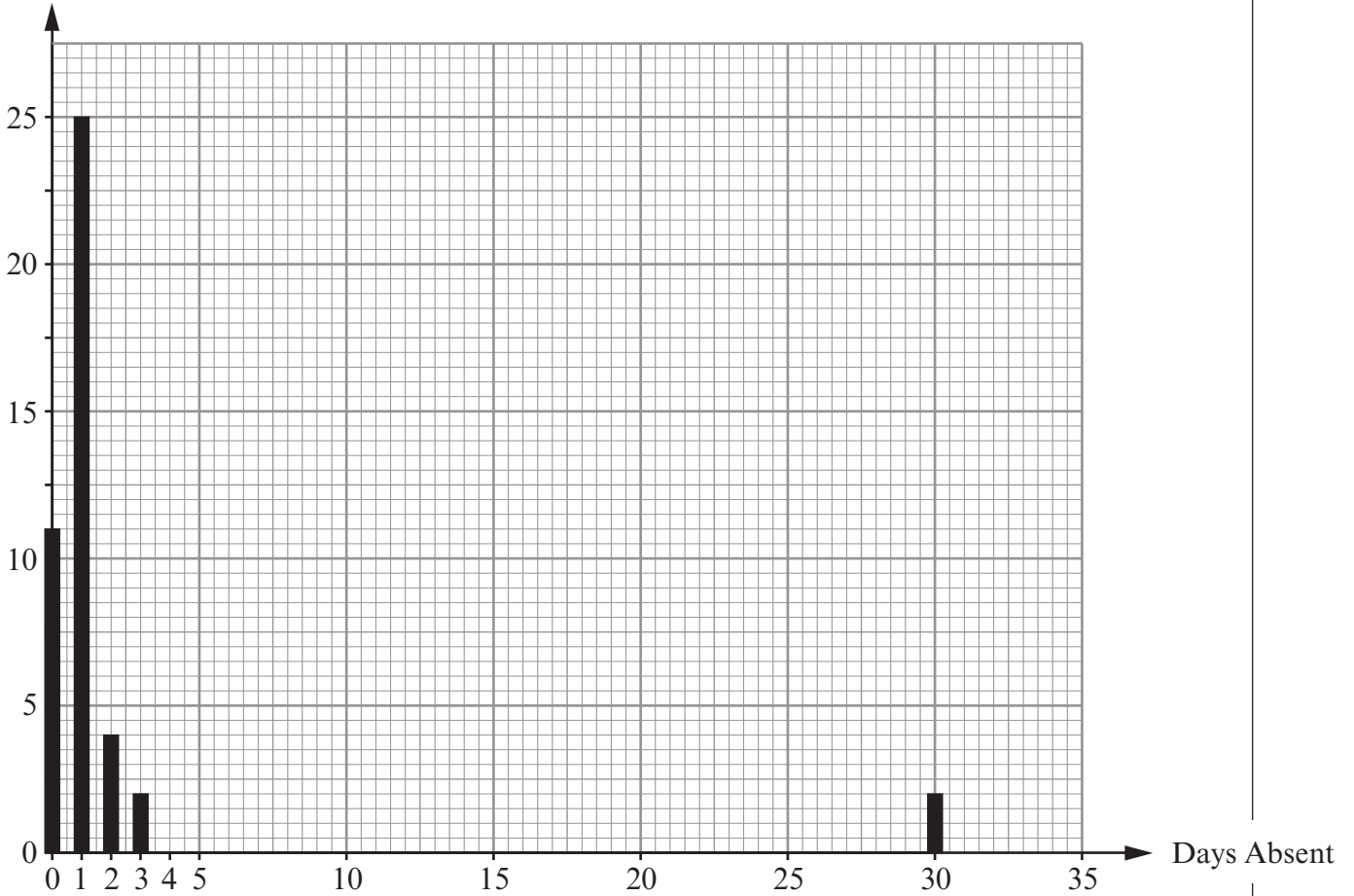
.....

.....

[1]

2. (a) A factory employs 44 people. The diagram below shows the distribution of the number of days' absence for each of these workers during the last three months.

Number of Workers



- (i) Calculate the mean number of days' absence of the workers.

.....

.....

.....

.....

[3]

- (ii) Why do you think this mean is a poor indicator for the average number of days' absence for these workers?

.....

.....

[1]



- (b) Why would it not be helpful, when calculating the mean, to show the information as a table with equal group intervals of 5 days starting with 0 to 4 days?

.....

.....

.....

[1]



2. (a) A class sat a Geography test and a French test.  
The marks gained by the pupils in these tests are summarised in the table below.

| Mark                         | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7  | 8 | 9 | 10 |
|------------------------------|---|---|---|---|---|---|---|----|---|---|----|
| Number of pupils – Geography |   |   |   |   | 2 | 4 | 5 | 13 | 5 | 1 |    |
| Number of pupils – French    |   | 2 | 5 | 4 | 6 | 5 | 0 | 4  | 3 | 0 | 1  |

- (i) For which subject was there a greater range of marks?  
You must give an explanation for your choice.

.....

.....

.....

[1]

- (ii) **Without making any calculations**, which subject had the greater mean mark for the test?  
You must give an explanation for your choice.

.....

.....

.....

[1]



3. (a) The mean of 5 numbers in a list is 24.  
When two extra numbers are added to the list, the mean increases by four.  
What does this tell you about the values of the two extra numbers?

.....

.....

.....

.....

.....

.....

.....

.....

.....

[3]

- (b) Four numbers are listed in ascending order.  
The mode of the four numbers is 3.  
No number in the list is greater than 3.  
The range of the four numbers is 5.  
The median of the four numbers is 2.  
Find the four numbers.

.....

.....

.....

.....

.....

.....

.....

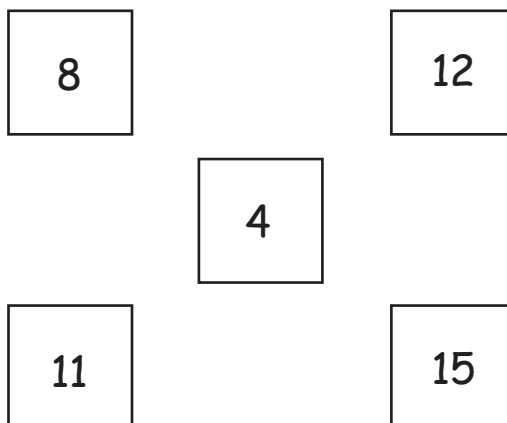
.....

[3]

3. Matthew is playing a game that uses numbered tiles.

The game involves working out the range and mean of the numbers on five tiles.

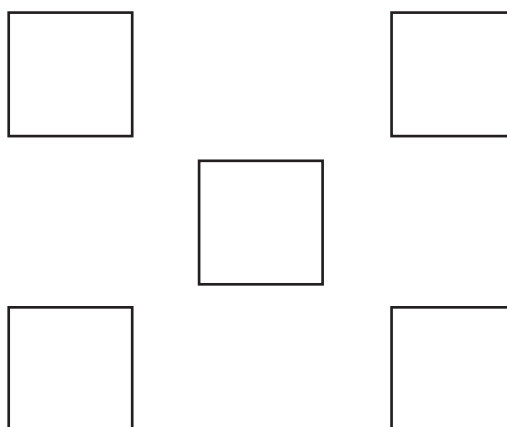
Matthew has these five tiles.



With his final move in a game, Matthew must replace **exactly two** of his tiles with two different tiles.

To win the game he must keep the **same range** as above but **increase the mean by 1**.

Fill in the numbers on the tiles below to show the three tiles he has kept, and the new numbers on the two tiles he has changed, if he is to win.



*For working:*

.....

.....

.....

.....

.....

.....

[3]





(b) Did this stall make a profit or a loss?  
You must calculate the amount of this profit or loss.

[2]

.....

.....

.....

.....

.....

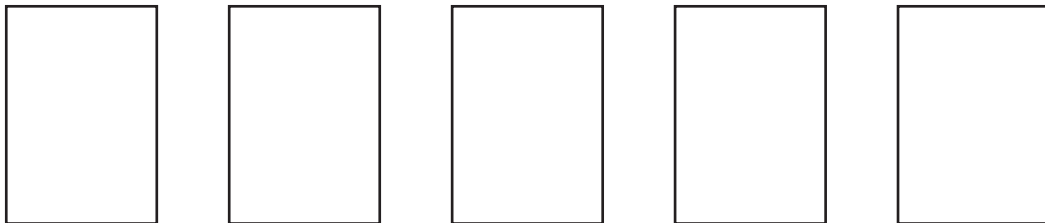
.....

.....

.....

4351  
02/00/05

4.



Five **single digit numbers** need to be written on the cards above.  
The median, mode, mean and range of the numbers must all be 5.  
Write a possible set of **single digit numbers** on the cards, in ascending order.

[4]

.....

.....

.....

.....

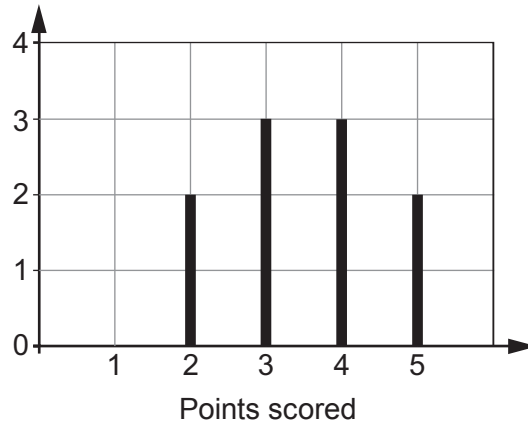
.....

3. Catrin and Samir each played a game ten times.  
In each game, between one and five points were scored.

Catrin had a mean score of 2.7 points for her ten games.  
The range of the number of points she scored on her games was 4.

Samir recorded his scores as shown on the grid below.

Number of games



- (a) Who had the bigger mean score?  
You **must** give a reason for your answer.

[1]

.....

.....

.....

- (b) Who had the bigger range of the number of points scored?  
You **must** give a reason for your answer.

[1]

.....

.....

.....