



## Analysing Data (2)

- Calculating the mean, median, mode and range from a frequency table

Keywords

You should know

explanation 1a

explanation 1b

explanation 1c

- 1** Ryan lives in Cambridge. One summer he decides to visit ten of his friends in different cities around the UK. The cities and their distances by road from Cambridge are given in the table.



City	Distance from Cambridge (km)
Portsmouth	216
Cardiff	326
Glasgow	566
Nottingham	139
Liverpool	309
Newcastle-upon-Tyne	369
Exeter	401
Perth	599
Birmingham	155
Leeds	237

- a** Write the cities in order of distance from Cambridge, starting with the nearest. What is the median distance?
- b** Use a calculator to find the following distances.
- i** the mean distance from Cambridge      **ii** the range of the distances
- c** Is the mode a useful measure of how far away the cities are, on average? Explain your answer.

- 2** Jamsheed asks his friends how many meals they ate in the school canteen in one week.

These are their replies.

5    2    0    5    4    3    0    2    0    5  
0    2    2    5    5    4    5    5    3    4

- a** How many people did Jamsheed ask?
- b** Work out the mean number of canteen meals the friends ate.
- c** Copy and complete the frequency table.

Number of meals	Tally	Frequency
0		
1		
2		
3		
4		
5		

- d** What is the median number of meals?
- e** How many people ate at least one canteen meal?
- f** Draw a bar chart to show the data.
- g** What is the modal number of meals?



- 3** Aneesa records the number of cars in the school car park each morning in February. These are her results.

25    28    28    24    27    27    28    24    25    28  
 28    24    27    26    28    26    28    28    27    24

- a** What is the range of the data?  
**b** Draw a frequency table for the data. It should start like this.

Number of cars	Tally	Frequency
24		

- c** Fill in your table. Use it to draw a bar chart showing the data.  
**d** Aneesa recorded the number of cars on 20 days. To find the median, she writes the data out in order and finds the value halfway between the 10th and 11th values. She says the answer is 27.

Use your table to decide if she is right. Explain how you decided.

- 4** Twenty children were asked how many bus journeys they took in a month. These are the results.

0    52    20    18    12    2    0    40    42    40  
 40    6    0    44    40    0    8    8    0    40

- a** What is the range of the data?  
**b** Use a calculator to work out the mean number of journeys taken.  
**c** There are two modes. What are they?  
**d** Copy and complete this grouped frequency table.

Number of journeys	Tally	Frequency
0–9		
10–19		

- e** Draw a bar chart for the data.  
**f i** Which is the modal group?  
**ii** Why is there only one, even though there are two modal values?  
**g** Which group is the median in? Explain how you decided.