

Interpretation of Data – GCSE Statistics**1. No.8****8**

The data show donations to a charity shop and the number of shoppers visiting the shop for each of 12 months in 2019.

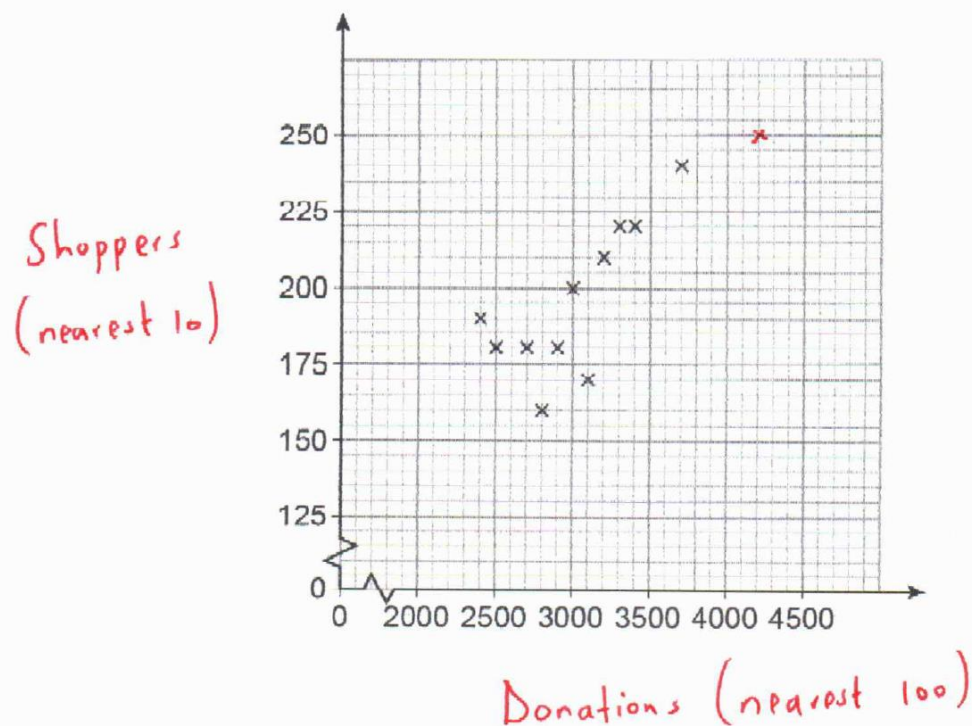
Both sets of data are rounded.

Month	Jan	Feb	Mar	Apr	May	Jun
Donations (nearest 100)	3200	2900	2700	3000	2800	3100
Shoppers (nearest 10)	210	180	180	200	160	170

Month	Jul	Aug	Sep	Oct	Nov	Dec
Donations (nearest 100)	2500	2400	3300	3400	3700	4200
Shoppers (nearest 10)	180	190	220	220	240	250

Jorja uses the data in the table to draw the following statistical diagram.

Graph to show donations to, and shoppers visiting, a charity shop



- 8 (a) Complete the diagram by inserting the **three** things that are currently missing. [3 marks]
- 8 (b) Jorja is investigating **only** the **number of shoppers** visiting the shop each month.
Comment on the appropriateness, for her investigation, of the **type** of diagram she has drawn. [1 mark]

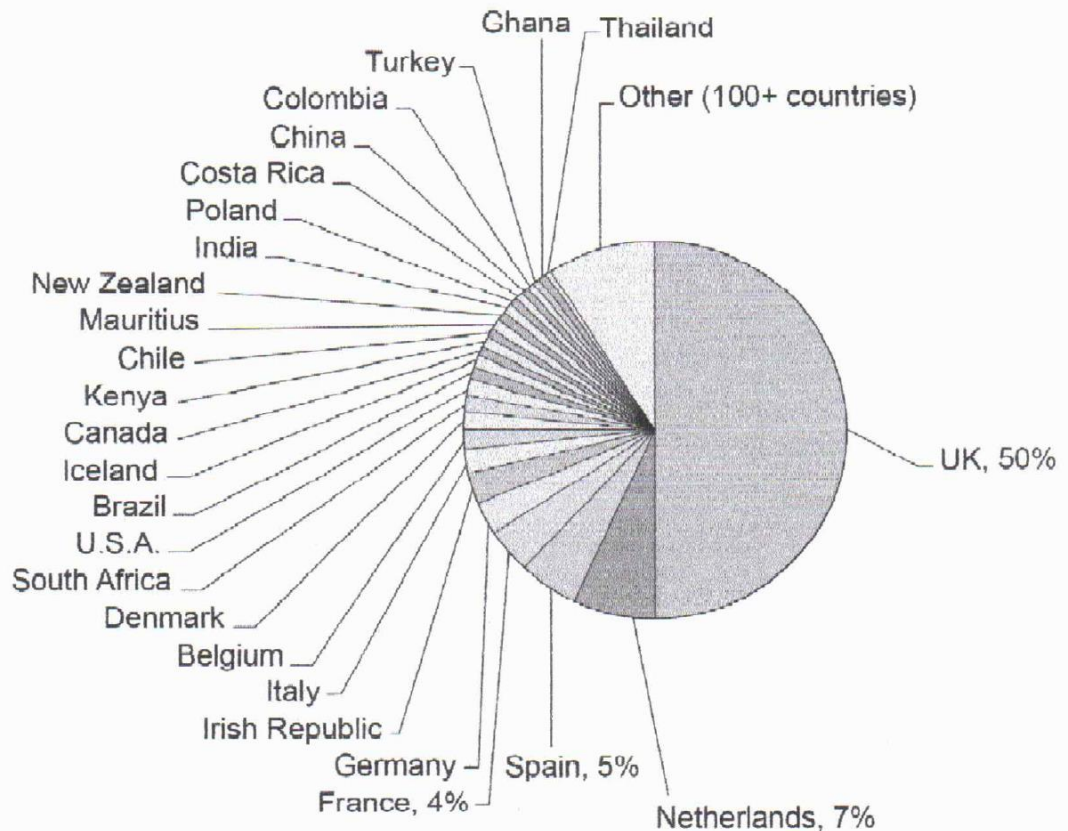
The scatter diagram is not appropriate since she is investigating only the number of shoppers.

2. No.14

14

The pie chart shows information about the source of UK food in 2007.

Sources of food consumed in the UK by value: 2007



Source: Full Fact

Write down **two** criticisms of the diagram.**[2 marks]**

Criticism 1

The angles are not visible for some countries

Criticism 2

More countries should have been grouped together since there are too many sections.

3. No.16

16

Natalie is selling her house.

At an asking price of £135 000, she is advised that the house would definitely sell within one month.

For each additional £1000 on the asking price, the risk of **not** selling within any one month increases by 0.05

16 (a) Natalie wants £150 000 for her house.

16 (a) (i) At £150 000, what is the risk that she will **not** sell her house within one month?

[2 marks]

$$= \frac{150\,000 - 135\,000}{1000} \times 0.05$$

$$= 15 \times 0.05$$

$$= 0.75$$

Answer 0.75

16 (a) (ii) At £150 000, what is the risk that she will **not** sell her house within two months?

[2 marks]

$$\text{Risk within one month} = 0.75 \text{ from a(i)}$$

$$\text{Risk with two months} = 0.75 \times 0.75$$

$$= 0.5625 \text{ or } \frac{9}{16}$$

Answer 0.5625

16 (a) (iii) What assumption did you have to make in answering part (a)(ii)?

[1 mark]

Selling the house in one month is independent to selling the house in another month.

- 16 (b) (i) Using the information given, what is the minimum price for which the house will apparently **never** sell?

[2 marks]

starting with £135 000

$$\frac{1}{0.05} \times 1000 = £20\,000$$

$$\therefore \text{Minimum price} = £135\,000 + £20\,000 = £155\,000$$

Answer £ 155 000

- 16 (b) (ii) Give a reason why the house may actually sell at this minimum price.

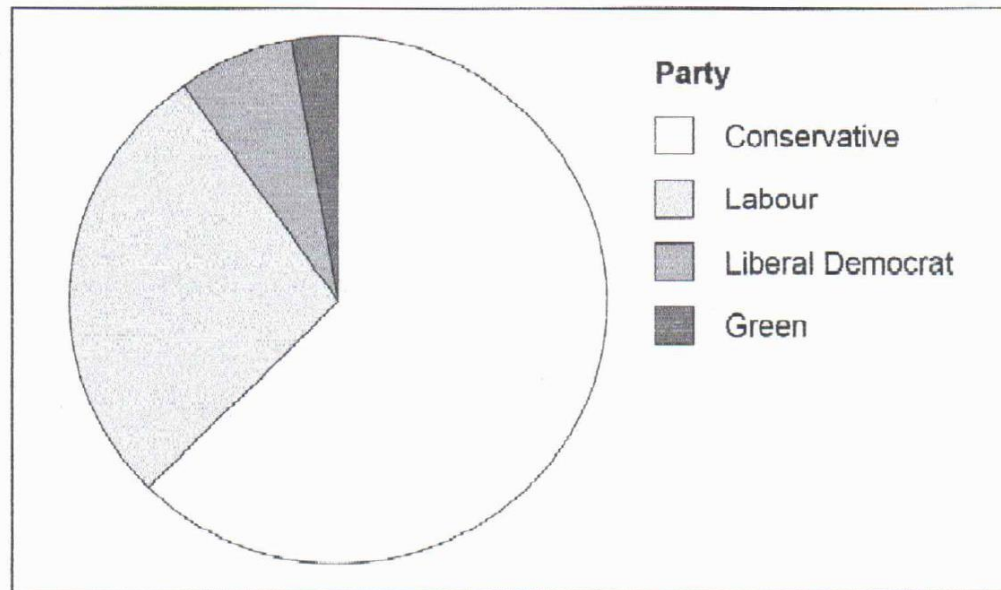
[1 mark]

The risk of not selling the house will change over time.

4. No.10

10

The pie chart shows information about how people voted in the Dartford area during the 2019 General Election.



10 (a) Which party had the most votes?

[1 mark]

Conservative (Its represented by the largest angle).

10 (b) 54 000 people are represented in the pie chart.

Work out how many of them voted for Labour.

[3 marks]

Measure the angle representing Labour = 100°

Angles in a Pie chart add upto 360°

$$\Rightarrow \text{Number of people} = \frac{100^\circ}{360^\circ} \times 54\,000 = 15\,000$$

Answer 15 000 .

5. No.5

5 BMI stands for Body Mass Index and is based on your height and mass.

5 (a) Louise and William have this hypothesis,

“Our classmates have a lower BMI than other Year 11 students in the country.”

They collect height and mass data from some of their classmates.

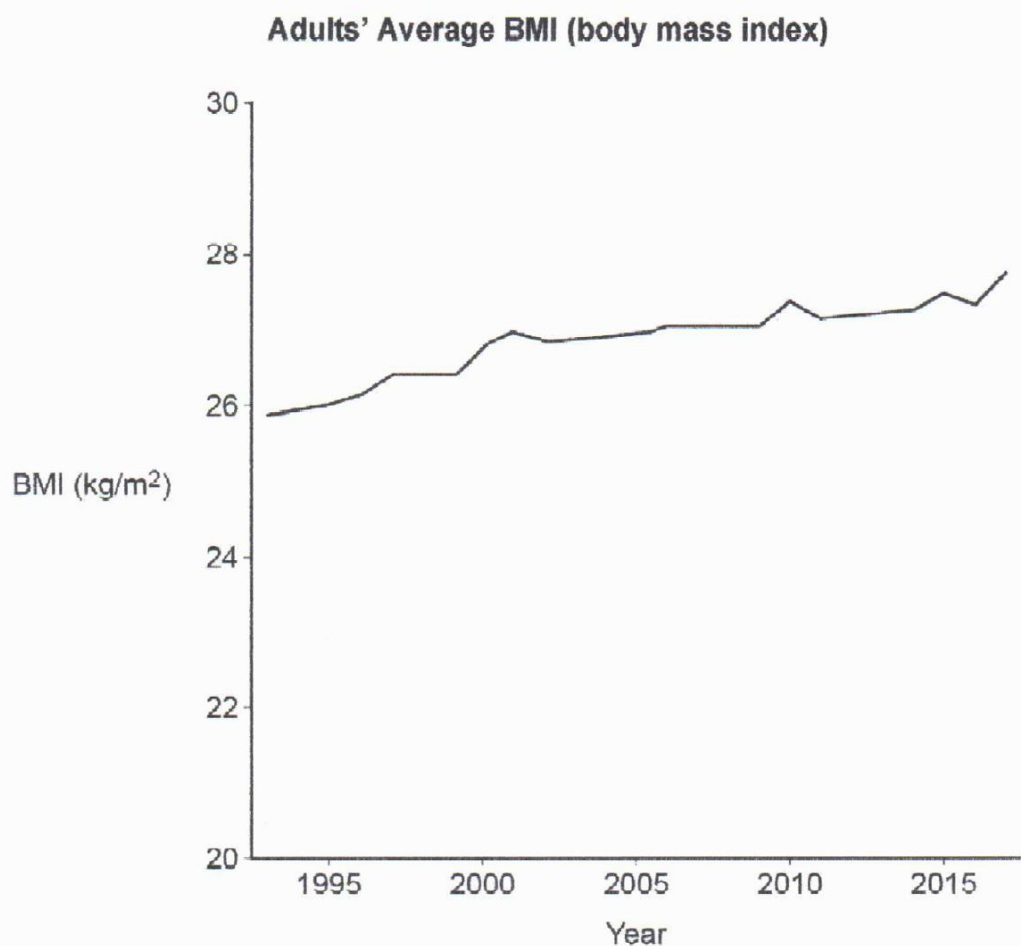
Gender	Height (m)	Mass (kg)
Female	1.38	51
Female	1.27	48
Female	1.31	39
Female	1.42	45
Female	1.52	55
Male	1.68	71
Male	1.60	65
Male	1.74	82
Female	1.38	51
Male	1.69	78

Give **one** criticism of the collected data.

[1 mark]

- Number of Females and males is not equal.
- It might be possible, data for one female has been repeated.

- 5 (b) The graph shows the average adult BMI over recent years.



Source: NHS Digital

A healthy BMI is considered to be between 18.5 and 24.9

Make **two** distinct comments about the graph.

[2 marks]

- 1 The vertical scale does not start at zero, so the graph does not give the correct reflection of the increase.
- 2 The average value is always above the given range of a healthy BMI.