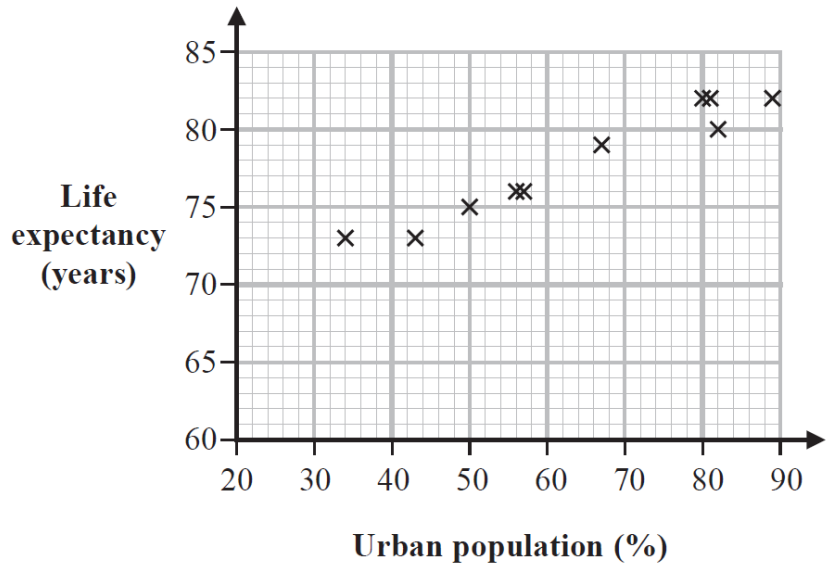


Q1

Scattergraphs and the double mean point

The scatter diagram from the statistical software is shown below.



For these 10 countries, the double mean point of the data is (63.9, 77.8).

(e) Using this information, draw a line of best fit on the scatter diagram.

(2)

Using statistical software, Irina finds that the gradient of the line of best fit should be 0.19

(f) Interpret the gradient of the line of best fit.

.....

.....

(1)

Irina now finds that South Africa has Urban population 65% and Life expectancy 63 years.

(g) Determine how this information for South Africa fits with the relationship shown in the scatter diagram for the other countries.

.....

# Scattergraphs and the double mean point

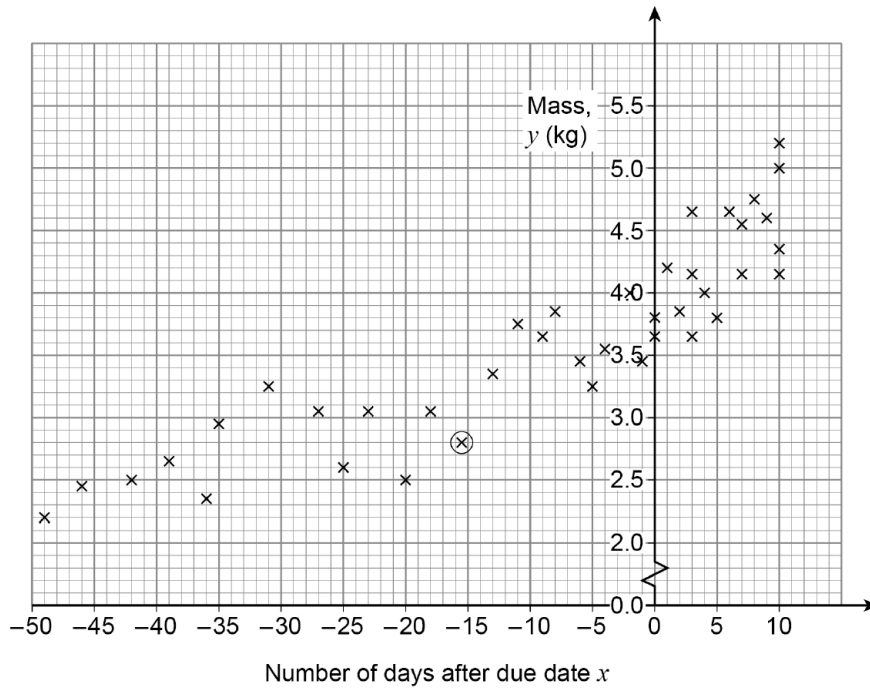
## Q2

The due date of a baby is the date on which it is expected to be born.

The scatter diagram shows the mass of 40 new-born babies **born** on March 20th 2021 plotted against the number of days the babies were born after their due date in whole days.

For example,

Value of number of days after due date	Interpretation
-10	Baby born 10 days <b>before</b> due date
5	Baby born 5 days <b>after</b> due date



- (a) How many of **these** babies had a due date of March 10th 2021?

Circle your answer.

1

2

3

4

The equation of the line of best fit for the data is  $y = 4.01 + 0.04x$

- (c) (i) Interpret the value 4.01 in the context of this scatter graph.

---



---



---

- (c) (ii) Interpret the value 0.04 in the context of this scatter graph.

---



---

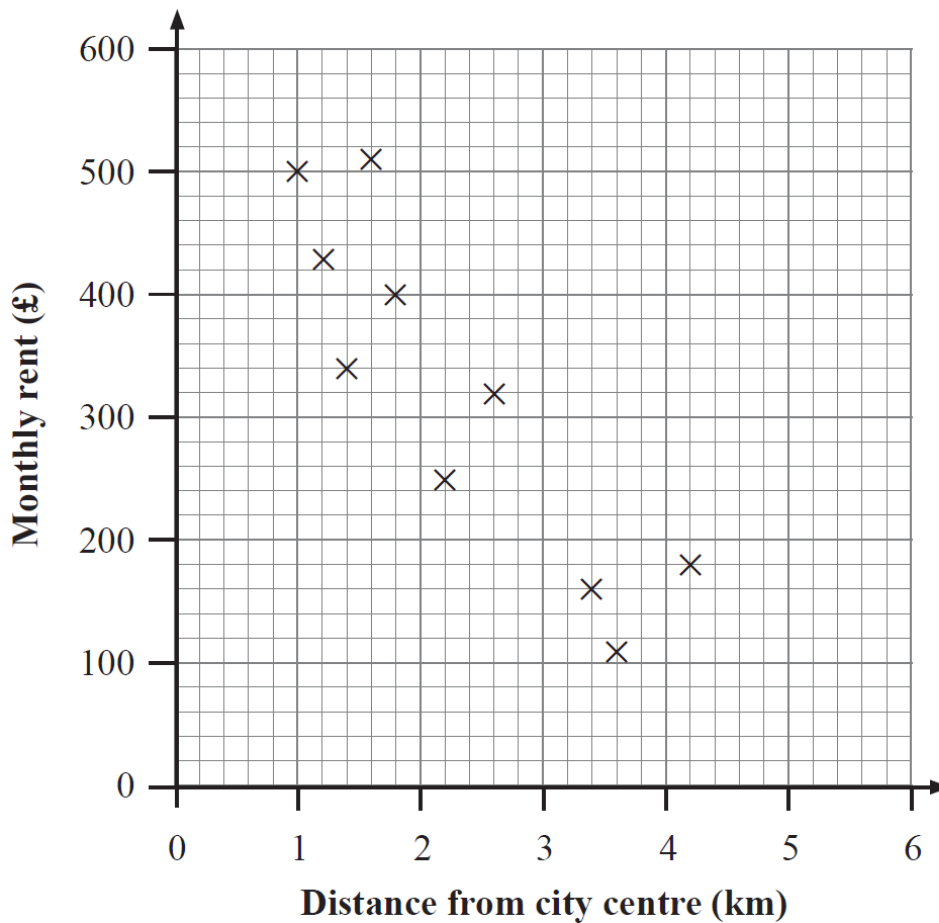


---

- (c) (iii) Draw the line of best fit on the graph.

The scatter diagram below shows some information about the monthly rent and distance from the city centre for 10 apartments in a city.

**Q3**



(a) Show that the mean distance from the city centre is 2.3 km.

The mean monthly rent for the 10 apartments is £320

(b) Plot the double mean point on the scatter diagram and draw a line of best fit. [2]

) Ella lives 3.0 km from the city centre.

(i) Could Ella use the line of best fit on the scatter diagram to estimate a price for her monthly rent?

Yes  No  [1]

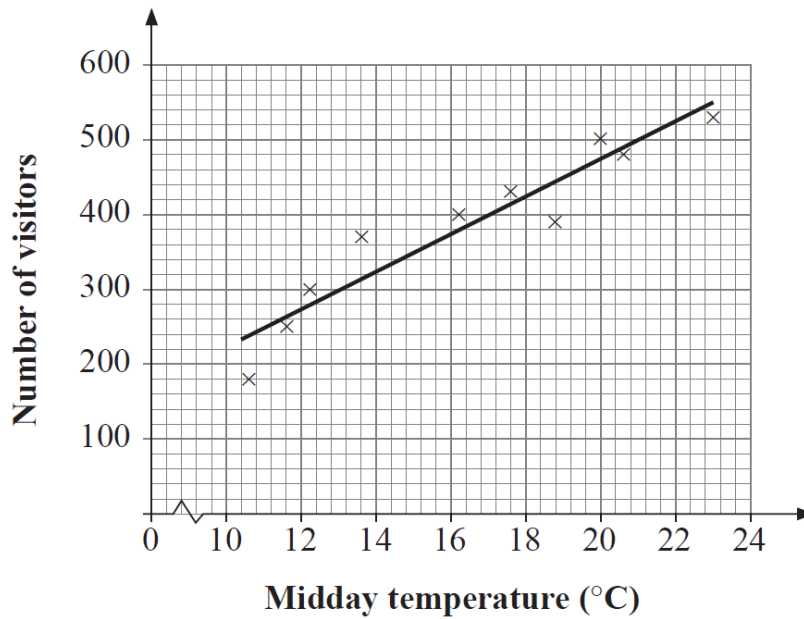
(ii) Give a reason for your answer.

# Scattergraphs and the double mean point

**Q4**

A travel agent recorded the midday temperature,  $x$ , and the number of visitors,  $y$ , to a park over a period of ten Saturdays between April and June.

His results are shown on the scatter diagram below.



(a) What type of data is shown in the scatter diagram?

Circle the two correct words below.

**Qualitative**

**Univariate**

**Bivariate**

**Ordinal**

**Quantitative**

**Categorical**

The equation of the line of best fit is  $y = -25.5 + 24.9x$

(d) Give an interpretation, in context, of the number 24.9 in the equation.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_ [2]

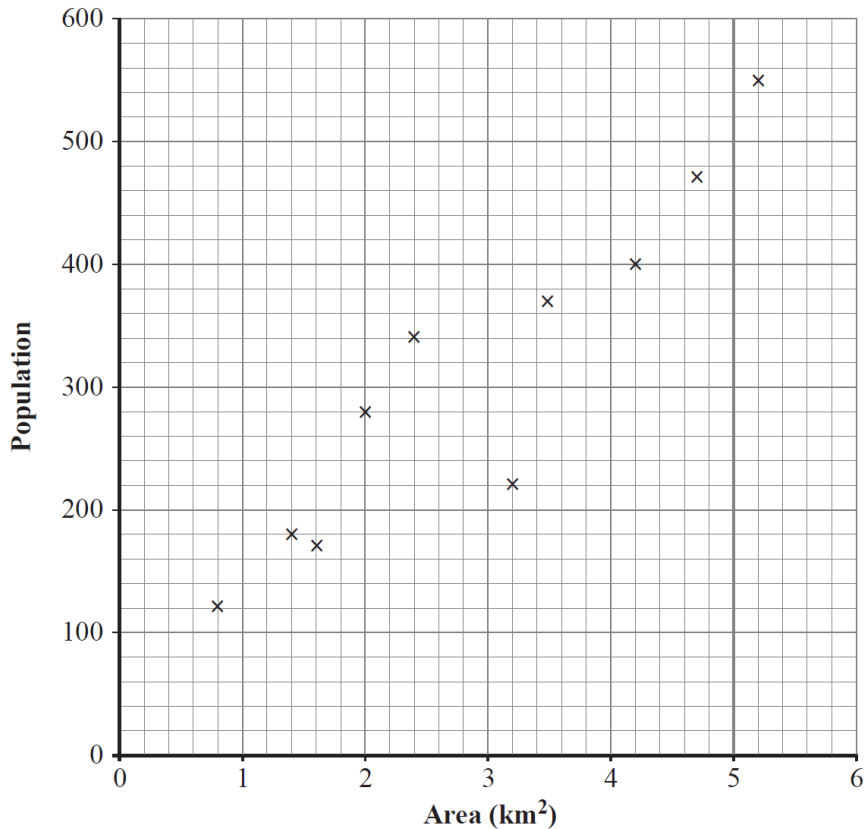
(e) Use the equation of the line of best fit to estimate the number of visitors to the park when the midday temperature is  $16^{\circ}\text{C}$

Answer \_\_\_\_\_ [2]

# Scattergraphs and the double mean point

**Q5** 7 Aoife uses the internet to investigate the land area and population of 10 small villages in Northern Ireland.

Her results are shown in the scatter diagram below.



(a) (i) Identify the response variable in the scatter diagram.

[1]

The mean area of the 10 small villages was  $2.9 \text{ km}^2$  and the mean population was 310 people.

(b) Plot the double mean point on the scatter diagram and draw a line of best fit. [2]

(c) Describe and interpret the correlation shown in the scatter diagram.

Aoife calculates the equation of her line of best fit to be  $y = 57 + 87x$

(d) Interpret, in context, the number 87 in this equation.

(e) Use the equation of her line of best fit to calculate an estimate of the population of a small village with a land area of  $4.4 \text{ km}^2$