

FREE SAMPLE

GCSE Maths: Statistics

Grade 4 starter questions

Questions	20
Total marks	61
Sub-topics covered	5
Papers drawn from	19
Years	2017 to 2025

Tables, charts, averages and correlation.

Every question is taken from the opening section of a real Edexcel Higher paper - the part where grade 4 marks are won - and is worth five marks or fewer.

The mark schemes are in a separate booklet, so you can work through these without the answers in front of you.

Question 1

June 2019 · Paper 2 · Q3

3 marks

3 Hannah is planning a day trip for 195 students.

She asks a sample of 30 students where they want to go.

Each student chooses one place.

The table shows information about her results.

Place	Number of students
Theme Park	10
Theatre	5
Sports Centre	8
Seaside	7

(i) Work out how many of the 195 students you think will want to go to the Theme Park.

.....
(2)

(ii) State any assumption you made **and** explain how this may affect your answer.

.....

.....

.....
(1)

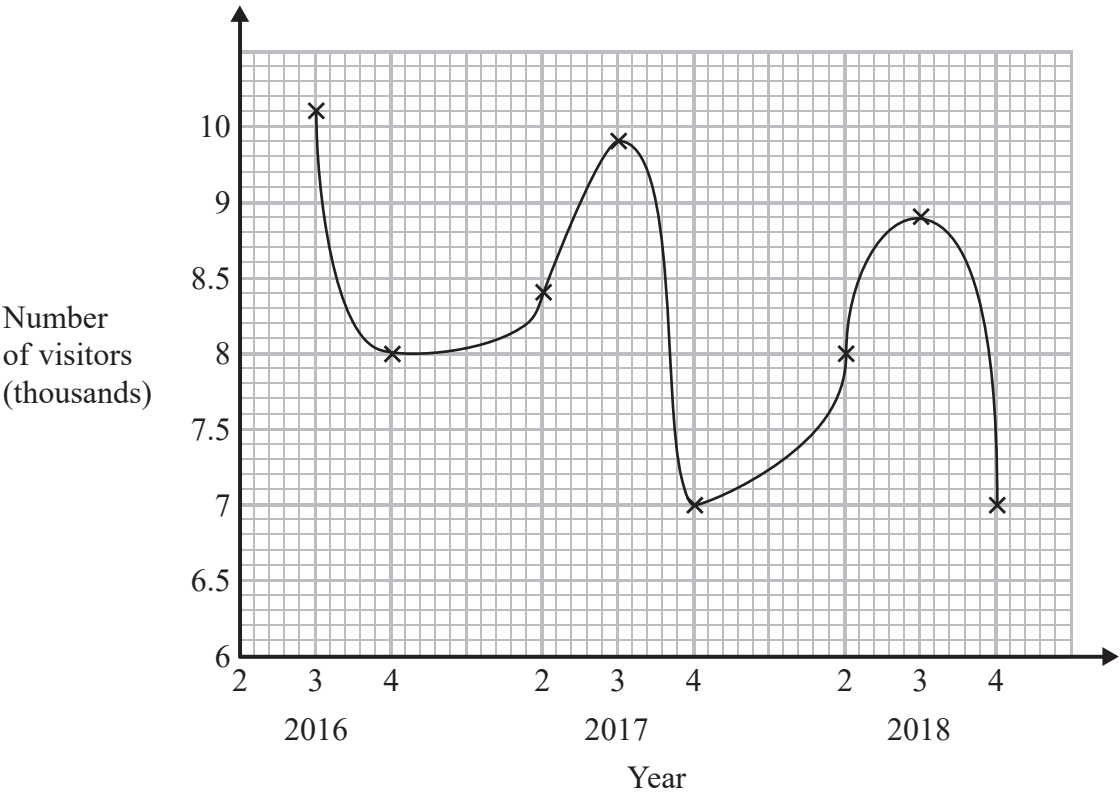
(Total for Question 3 is 3 marks)

Question 2

June 2019 · Paper 3 · Q4

2 marks

4 Sean has drawn a time series graph to show the numbers, in thousands, of visitors to a fun park.



Write down two things that are wrong or could be misleading with this graph.

1

.....

.....

.....

2

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.....

.....

(Total for Question 4 is 2 marks)

Question 3

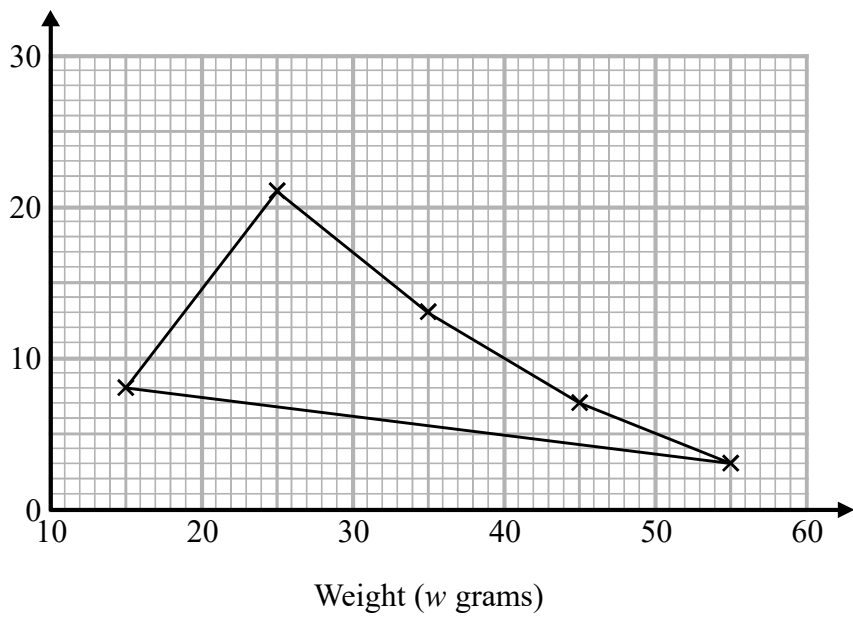
November 2019 · Paper 2 · Q1

2 marks

1 The table shows some information about the weights of 50 potatoes.

Weight (w grams)	Frequency
$10 < w \leq 20$	6
$20 < w \leq 30$	21
$30 < w \leq 40$	13
$40 < w \leq 50$	7
$50 < w \leq 60$	3

Iveta drew this frequency polygon for the information in the table.
The frequency polygon is **not** fully correct.



Write down **two** things that are wrong with the frequency polygon.

- 1.....
-
- 2.....
-

(Total for Question 1 is 2 marks)

Question 4

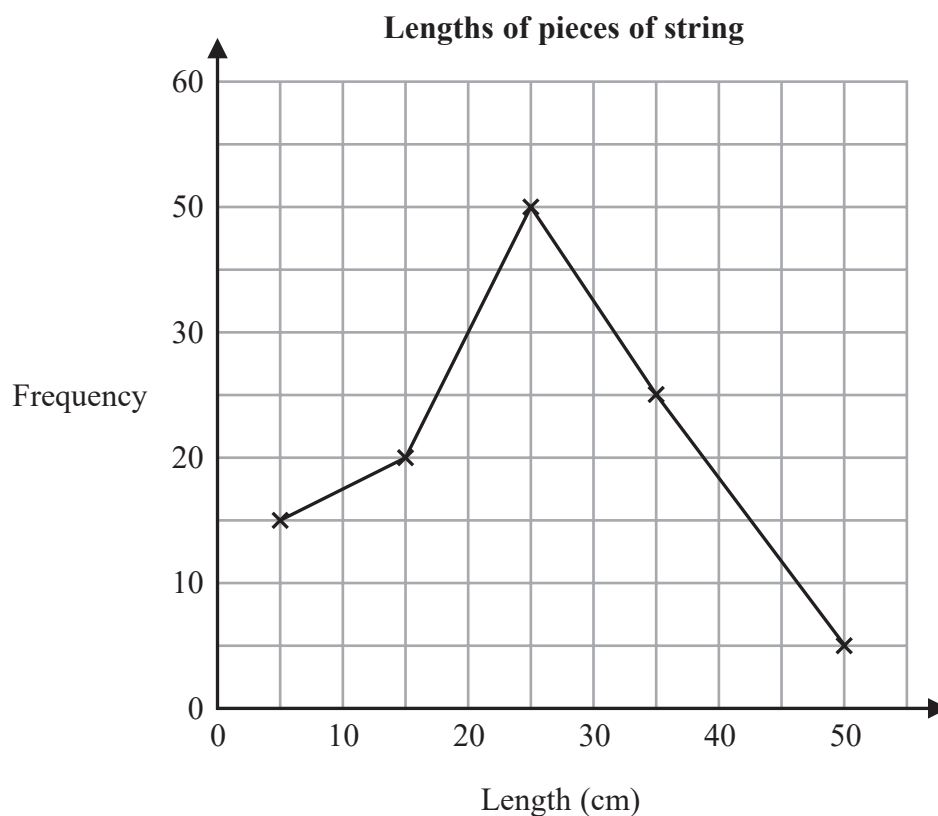
June 2022 · Paper 3 · Q5

2 marks

5 The table gives information about the lengths, in cm, of some pieces of string.

Length (t cm)	Frequency
$0 < t \leq 10$	15
$10 < t \leq 20$	20
$20 < t \leq 30$	50
$30 < t \leq 40$	25
$40 < t \leq 50$	5

Amos draws a frequency polygon for the information in the table.



Write down **two** mistakes that Amos has made.

- 1.....
-
- 2.....
-

(Total for Question 5 is 2 marks)

Question 5

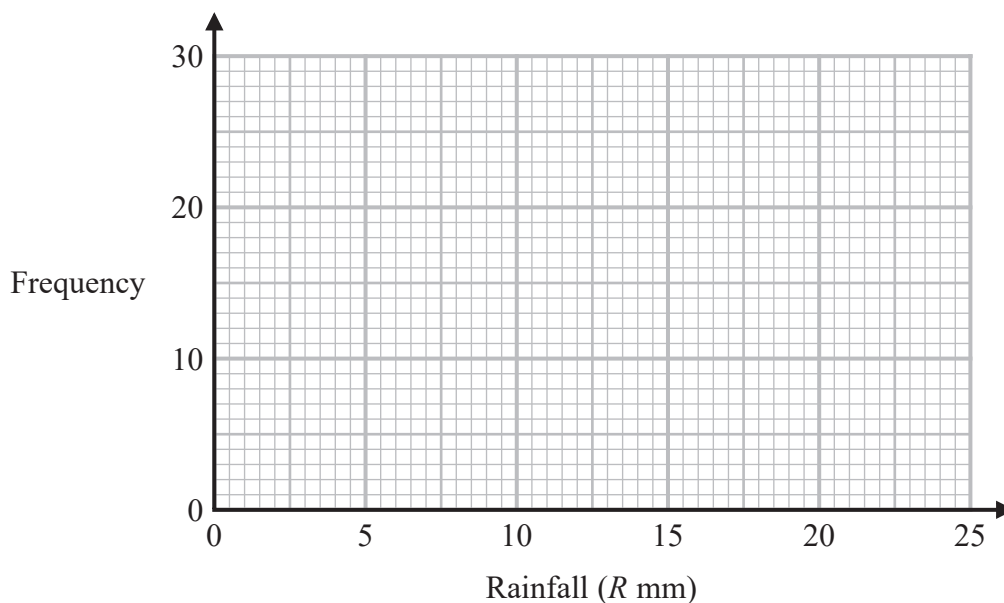
June 2023 · Paper 1 · Q4

2 marks

- 4 The table shows information about the daily rainfall in a town for 60 days.

Rainfall (R mm)	Frequency
$0 \leq R < 5$	8
$5 \leq R < 10$	24
$10 \leq R < 15$	13
$15 \leq R < 20$	11
$20 \leq R < 25$	4

Draw a frequency polygon for this information.



(Total for Question 4 is 2 marks)

Question 6

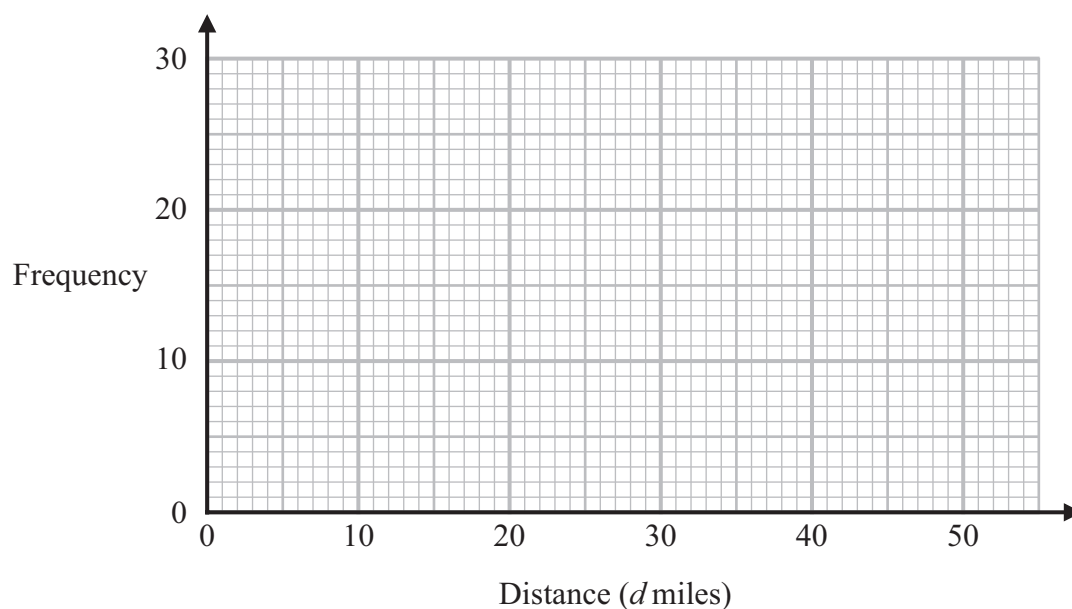
June 2025 · Paper 3 · Q1

2 marks

- 1 The table shows information about the distances that 60 people travel to work.

Distance (d miles)	Frequency
$0 < d \leq 10$	12
$10 < d \leq 20$	25
$20 < d \leq 30$	10
$30 < d \leq 40$	8
$40 < d \leq 50$	5

Draw a frequency polygon for the information in the table.



(Total for Question 1 is 2 marks)

Question 7

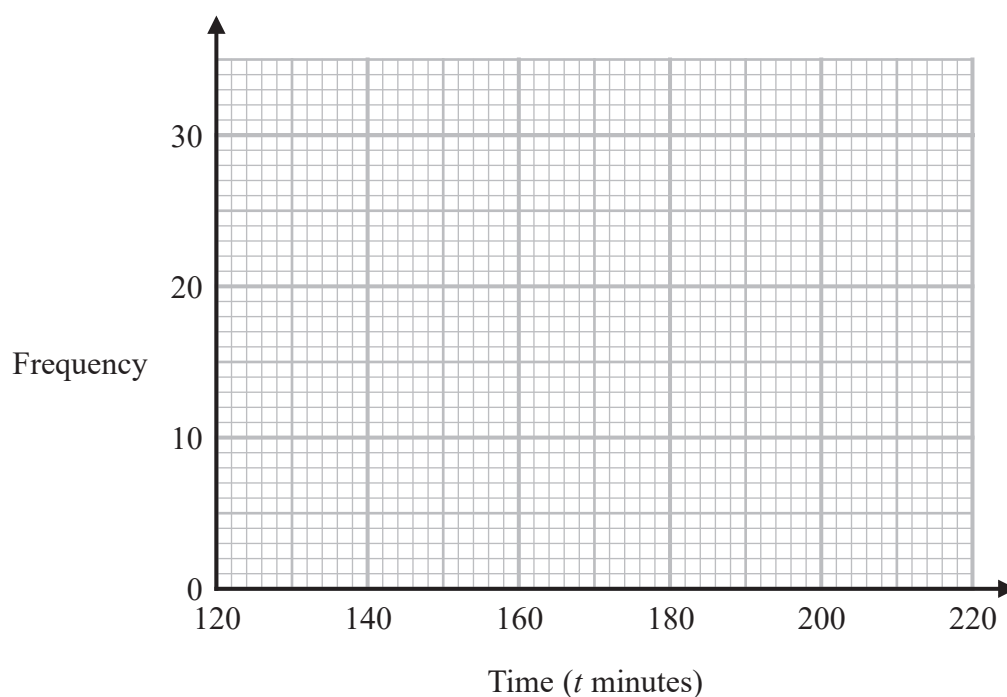
November 2024 · Paper 3 · Q1

2 marks

- 1 The table shows information about the times, in minutes, 100 people took to complete a bike race.

Time (t minutes)	Frequency
$120 \leq t < 140$	12
$140 \leq t < 160$	28
$160 \leq t < 180$	30
$180 \leq t < 200$	22
$200 \leq t < 220$	8

On the grid below, draw a frequency polygon for this information.



(Total for Question 1 is 2 marks)

S4 Comparing Distributions

Question 8

November 2019 · Paper 1 · Q6

3 marks

- 6 4 red bricks have a mean weight of 5 kg.
5 blue bricks have a mean weight of 9 kg.
1 green brick has a weight of 6 kg.

Donna says,

“The mean weight of the 10 bricks is less than 7 kg.”

Is Donna correct?

You must show how you get your answer.

(Total for Question 6 is 3 marks)

Question 9

November 2019 · Paper 3 · Q4

3 marks

- 4 The table gives information about the times taken, in seconds, by 18 students to run a race.

Time (t seconds)	Frequency
$5 < t \leq 10$	1
$10 < t \leq 15$	2
$15 < t \leq 20$	7
$20 < t \leq 25$	8

Work out an estimate for the mean time.

Give your answer correct to 3 significant figures.

..... seconds

(Total for Question 4 is 3 marks)

Question 10

November 2020 · Paper 1 · Q7

3 marks

- 7 The table shows information about the heights, in cm, of a group of Year 9 girls.

least height	150 cm
median	165 cm
greatest height	170 cm

This stem and leaf diagram shows information about the heights, in cm, of a group of 15 Year 9 boys.

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

Key: 15 | 8 represents 158 cm

Compare the distribution of the heights of the girls with the distribution of the heights of the boys.

.....

.....

.....

.....

.....

.....

(Total for Question 7 is 3 marks)

Question 11

November 2017 · Paper 1 · Q5

4 marks

- 5 The table shows information about the weekly earnings of 20 people who work in a shop.

Weekly earnings (£ x)	Frequency
$150 < x \leq 250$	1
$250 < x \leq 350$	11
$350 < x \leq 450$	5
$450 < x \leq 550$	0
$550 < x \leq 650$	3

- (a) Work out an estimate for the mean of the weekly earnings.

£.....
(3)

Nadiya says,

“The mean may **not** be the best average to use to represent this information.”

- (b) Do you agree with Nadiya?
You must justify your answer.

.....
.....
(1)

(Total for Question 5 is 4 marks)

Question 12

November 2023 · Paper 1 · Q4

4 marks

- 4 The mean length of 5 sticks is 4.2 cm.

Nawal measured the length of one of the sticks as 7 cm.

- (a) Work out the mean length of the other 4 sticks.

..... cm
(3)

Nawal made a mistake.

The stick was not 7 cm long.

It was 17 cm long.

- (b) How does this affect your answer to part (a)?

.....
.....
.....
(1)

(Total for Question 4 is 4 marks)

Question 13

November 2023 · Paper 3 · Q3

4 marks

3 Seija works at a weather station.

The table gives information about the temperature, T °C, at midday for each of 50 cities in the UK on Tuesday.

Temperature (T °C)	Frequency
$10 < T \leq 15$	2
$15 < T \leq 20$	8
$20 < T \leq 25$	13
$25 < T \leq 30$	21
$30 < T \leq 35$	6

(a) Calculate an estimate for the mean temperature.

..... °C
(3)

Seija says,

“The median temperature is 22.5 °C because 22.5 is the middle number in the middle group.”

(b) Is Seija correct?

Give a reason for your answer.

.....
.....
.....
(1)

(Total for Question 3 is 4 marks)

Question 14

November 2024 · Paper 3 · Q6

4 marks

- 6 The stem and leaf diagram shows the test scores of 23 students from School A.

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

Key:

3 | 0 represents 30

23 students from School B did the same test.

Their median score was 56

The range of their scores was 47

Compare the distribution of the test scores of the students from School A with the distribution of the test scores of the students from School B.

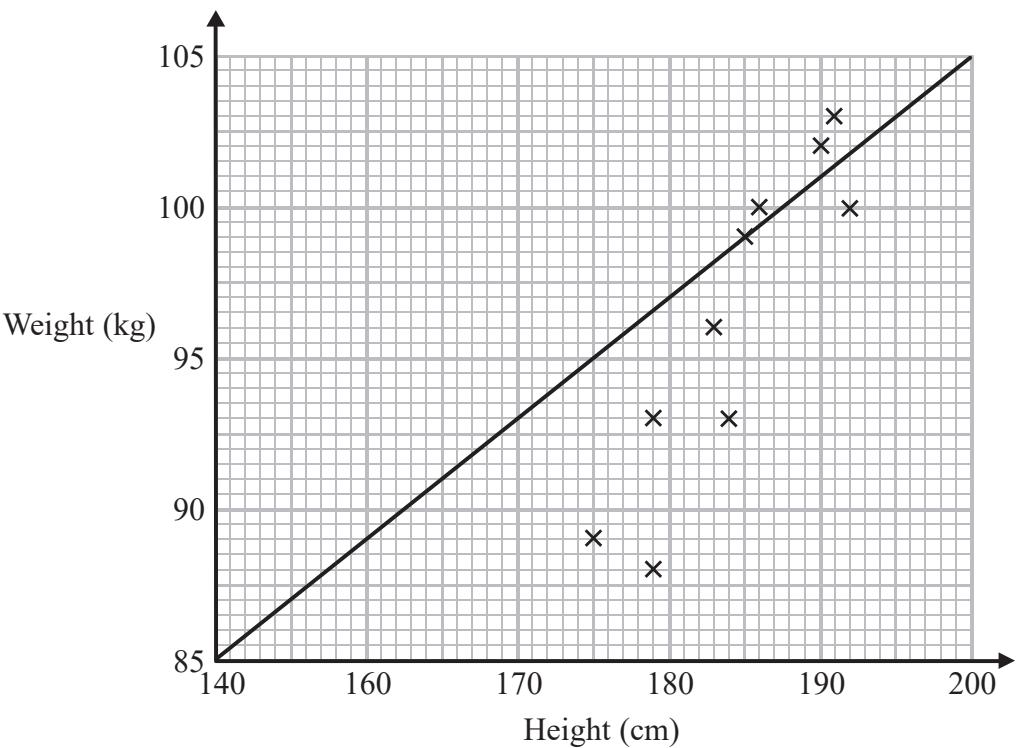
(Total for Question 6 is 4 marks)

Question 15

November 2018 · Paper 2 · Q2

2 marks

2 Sean has information about the height, in cm, and the weight, in kg, of each of ten rugby players. He is asked to draw a scatter graph and a line of best fit for this information. Here is his answer.



Sean has plotted the points accurately.
Write down two things that are wrong with his answer.

1

.....

2

.....

(Total for Question 2 is 2 marks)

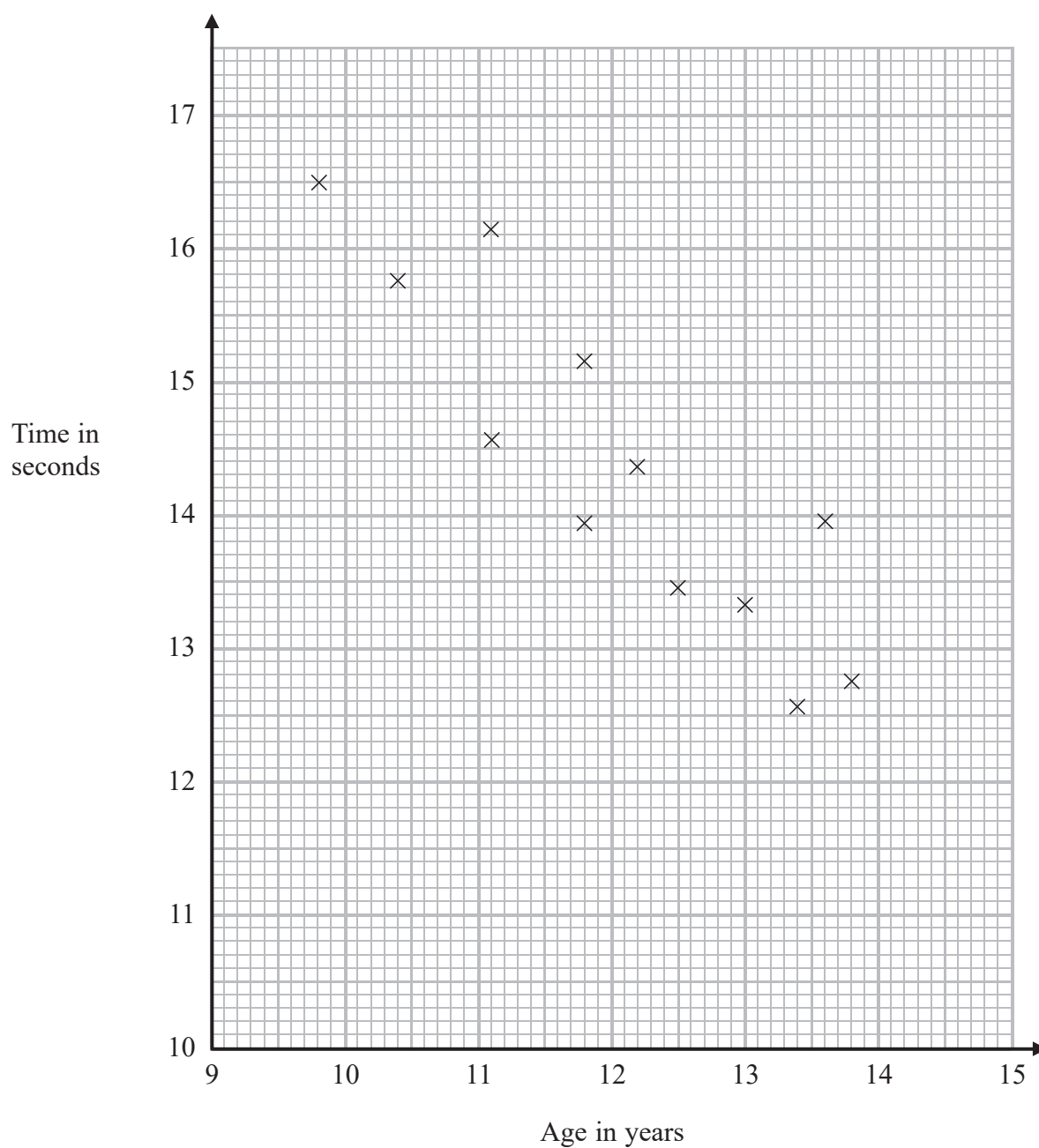
Question 16

June 2018 · Paper 3 · Q1

3 marks

- 1 The scatter diagram shows information about 12 girls.

It shows the age of each girl and the best time she takes to run 100 metres.



- (a) Write down the type of correlation.

(1)

Kristina is 11 years old.

Her best time to run 100 metres is 12 seconds.

The point representing this information would be an outlier on the scatter diagram.

(b) Explain why.

(1)

Debbie is 15 years old.

Debbie says,

“The scatter diagram shows I should take less than 12 seconds to run 100 metres.”

(c) Comment on what Debbie says.

(1)

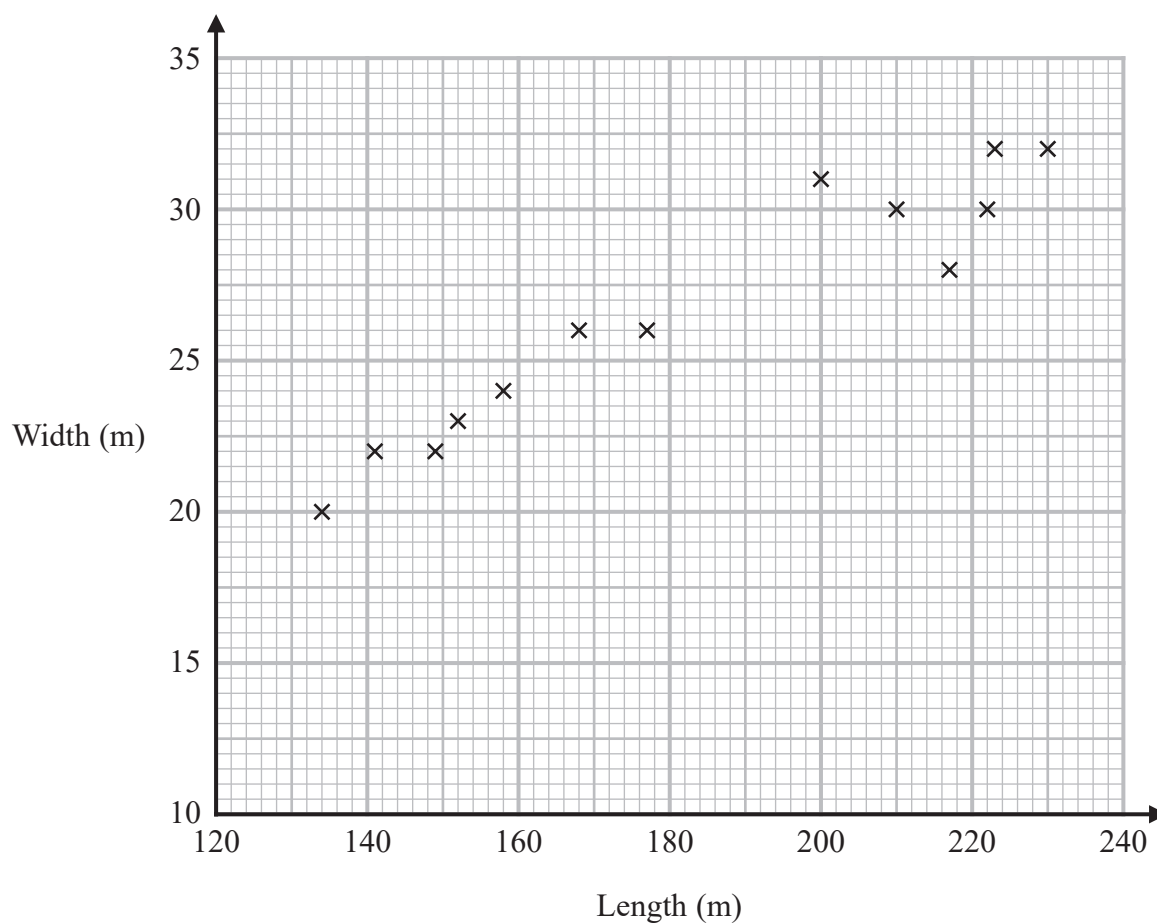
(Total for Question 1 is 3 marks)

Question 17

November 2024 · Paper 2 · Q2

3 marks

- 2 The scatter graph shows information about some ships.
It shows the length and the width of each ship.



- (a) What type of correlation does this scatter graph show?

.....
(1)

- (b) Draw a line of best fit on the scatter graph.

(1)

A different ship has a length of 194 metres.

- (c) Use your line of best fit to find an estimate for the width of this ship.

..... metres
(1)

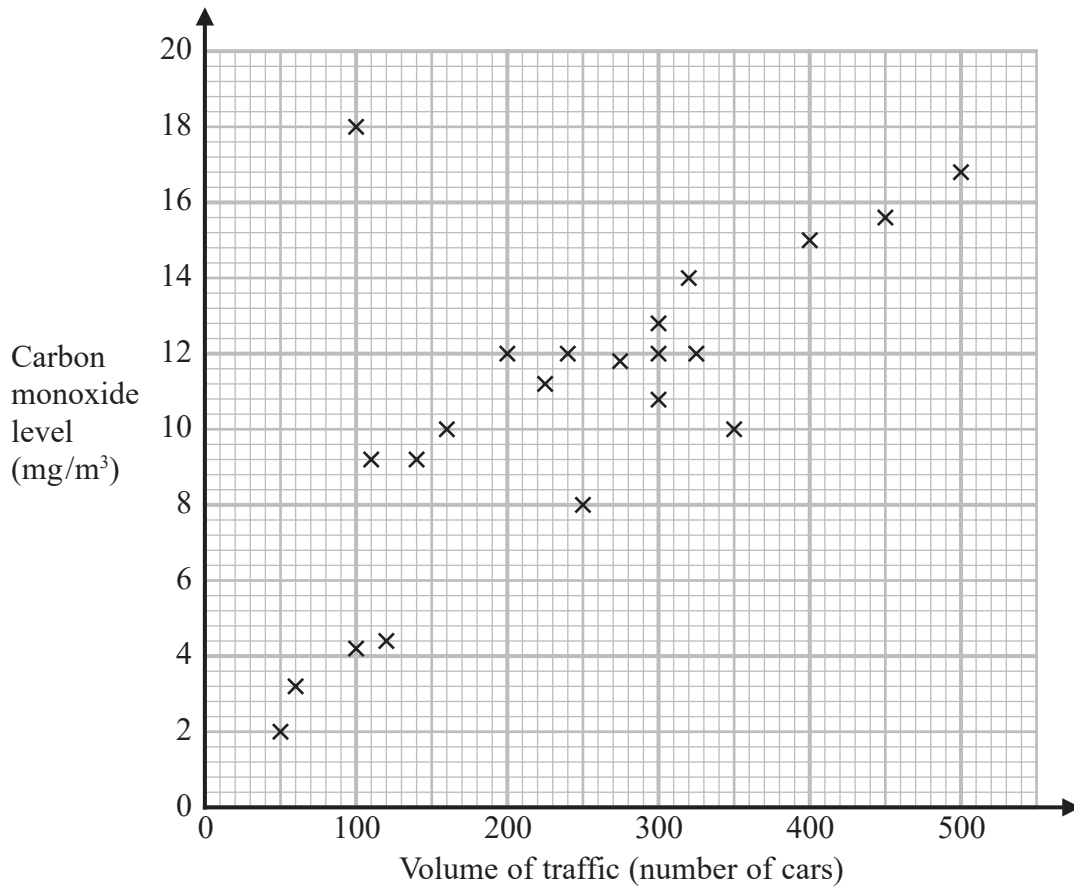
(Total for Question 2 is 3 marks)

Question 18

November 2021 · Paper 3 · Q1

4 marks

- 1 The scatter graph shows information about the volume of traffic and the carbon monoxide level at a point on a road each day for 22 days.



One point is an outlier.

- (a) Write down the coordinates of this point.

(.....,)
(1)

For another day, 370 cars pass the point on the road.

- (b) Estimate the carbon monoxide level for this day.

..... mg/m³
(2)

Alfie says,

“Because there is an outlier, there is no correlation.”

(c) Is Alfie correct?

You must give a reason for your answer.

.....

.....

.....

(1)

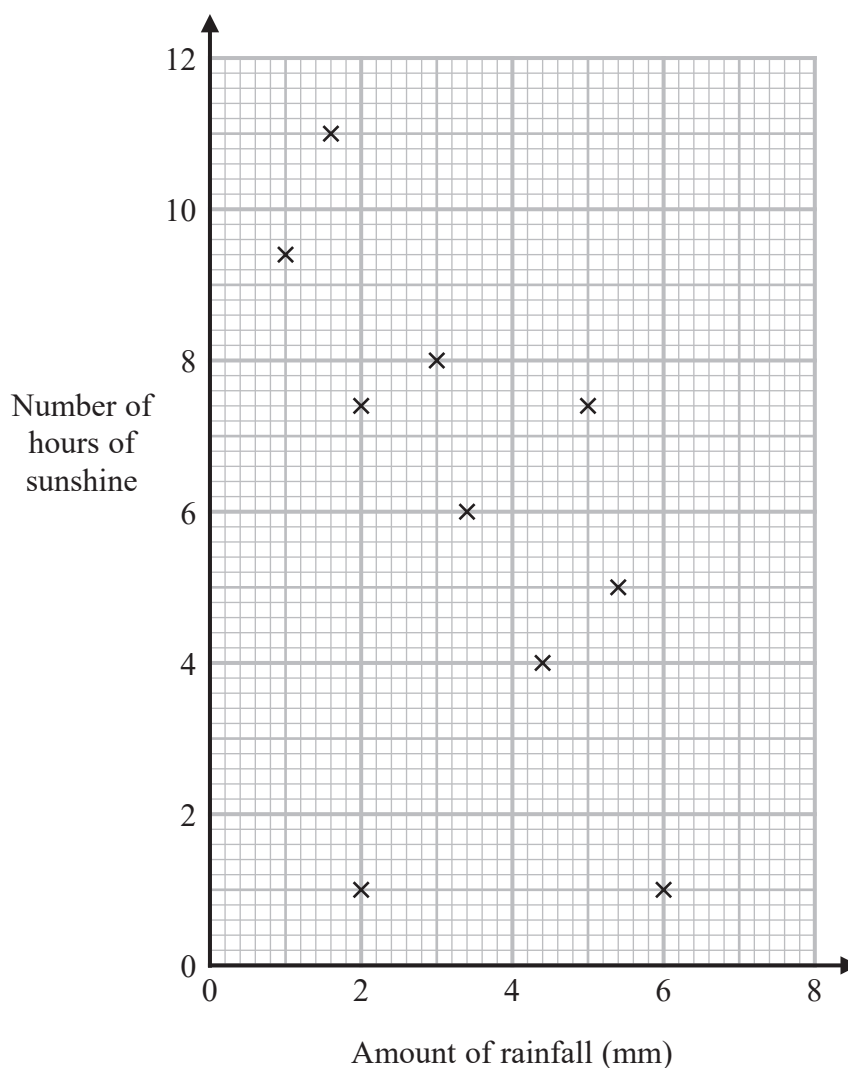
(Total for Question 1 is 4 marks)

Question 19

November 2022 · Paper 2 · Q1

4 marks

- 1 The scatter graph shows information about the amount of rainfall, in mm, and the number of hours of sunshine for each of ten English towns on the same day.



One of the points is an outlier.

- (a) Write down the coordinates of this point.

(..... ,)
(1)

(b) Ignoring the outlier, describe the relationship between the amount of rainfall and the number of hours of sunshine.

.....

.....

.....

(1)

On the same day in another English town there were 7 hours of sunshine.

(c) Using the scatter graph, estimate the amount of rainfall in this town on this day.

..... mm

(2)

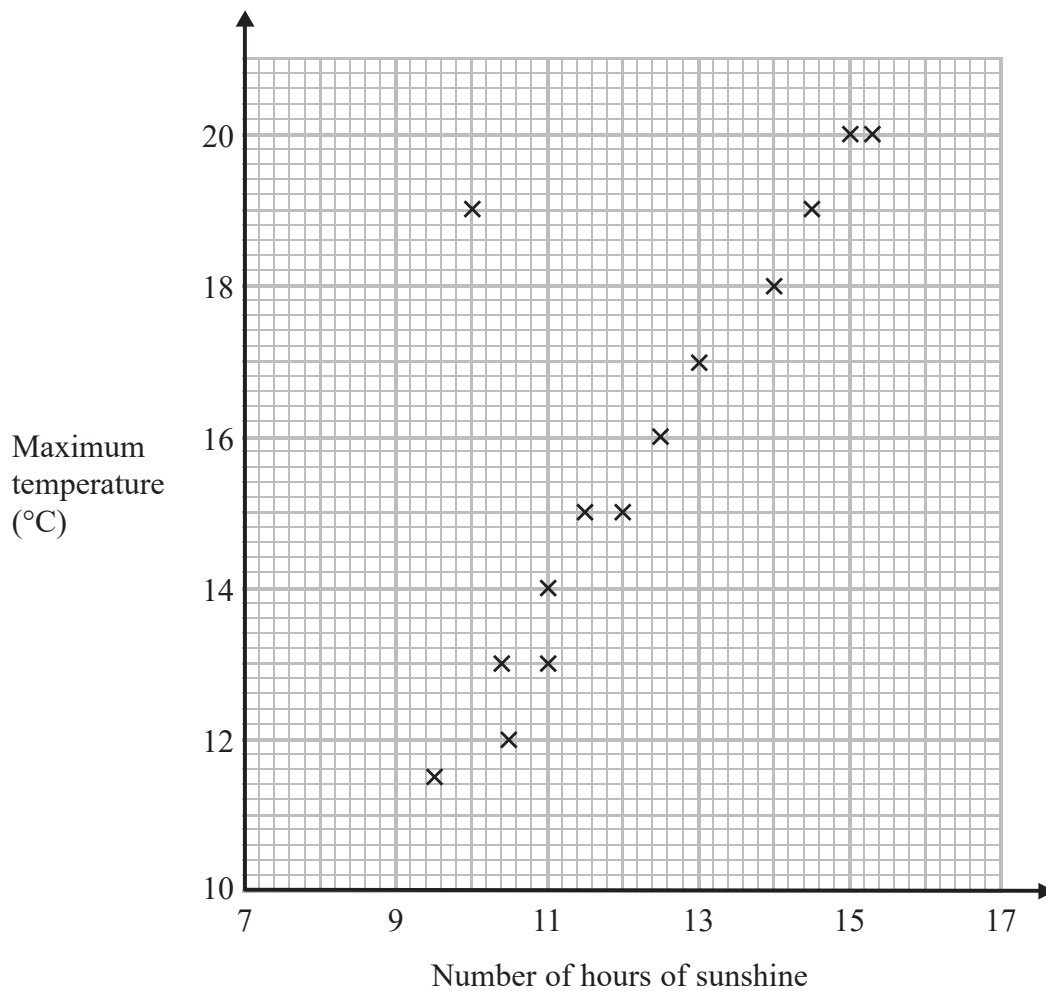
(Total for Question 1 is 4 marks)

Question 20

June 2017 · Paper 1 · Q1

5 marks

- 1 The scatter graph shows the maximum temperature and the number of hours of sunshine in fourteen British towns on one day.



One of the points is an outlier.

- (a) Write down the coordinates of this point.

(..... ,)
(1)

- (b) For all the other points write down the type of correlation.

.....
(1)

On the same day, in another British town, the maximum temperature was 16.4°C .

(c) Estimate the number of hours of sunshine in this town on this day.

..... hours
(2)

A weatherman says,

“Temperatures are higher on days when there is more sunshine.”

(d) Does the scatter graph support what the weatherman says?
Give a reason for your answer.

.....
.....
(1)

(Total for Question 1 is 5 marks)