

GCSE Grade 4

Maths

Booklet 4

Paper 3H
Calculator

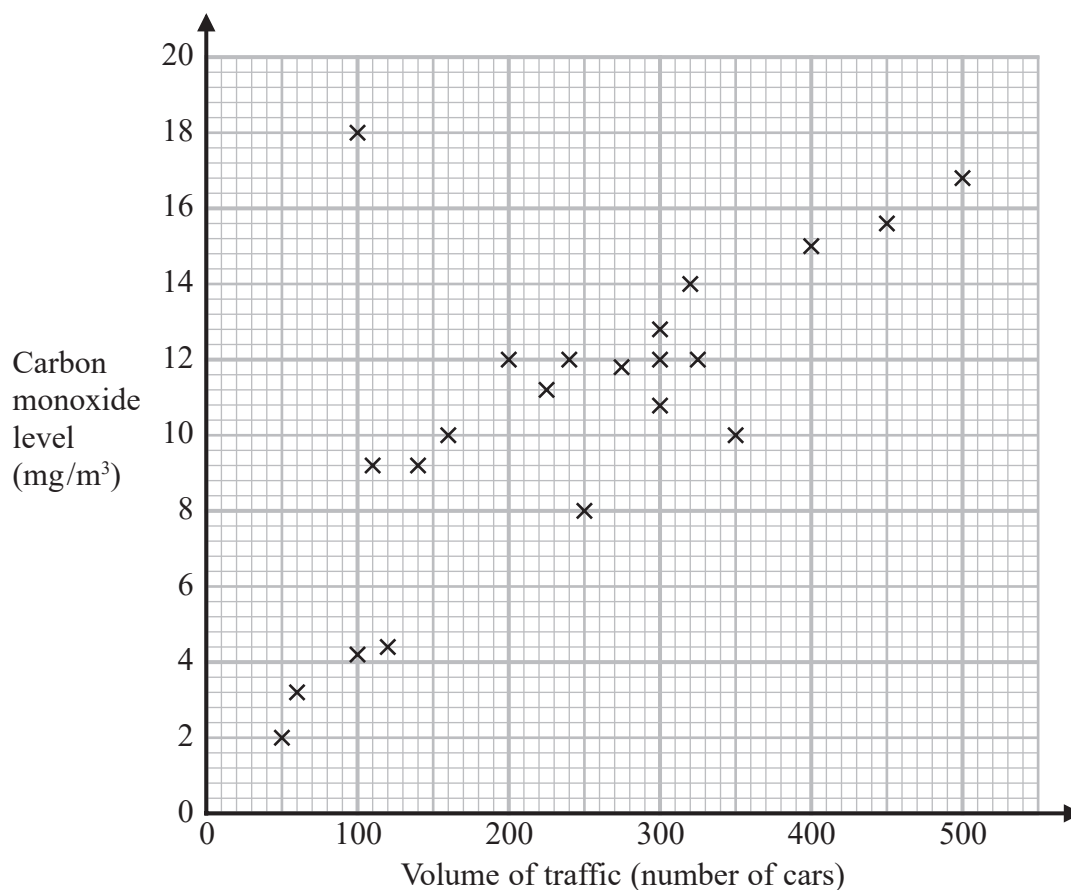
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Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

- 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)



2 Natalie makes potato cakes in a restaurant.

She mixes potato, cheese and onion so that

weight of potato : weight of cheese : weight of onion = 9 : 2 : 1

Natalie needs to make 6000 g of potato cakes.

Cheese costs £2.25 for 175 g.

Work out the cost of the cheese needed to make 6000 g of potato cakes.

£.....

(Total for Question 2 is 4 marks)



- 3 (a) Write 4.5×10^5 as an ordinary number.

.....
(1)

- (b) Write 0.007 in standard form.

.....
(1)

- (c) Work out $4.2 \times 10^3 + 5.3 \times 10^2$
Give your answer in standard form.

.....
(2)

(Total for Question 3 is 4 marks)



- 4 A water tank is empty.
Anil needs to fill the tank with 2400 litres of water.

Company **A** supplies water at a rate of 8 litres in 1 minute 40 seconds.

Company **B** supplies water at a rate of 2.2 gallons per minute.

1 gallon = 4.54 litres

Company **A** would take more time to fill the tank than Company **B** would take to fill the tank.

How much more time?

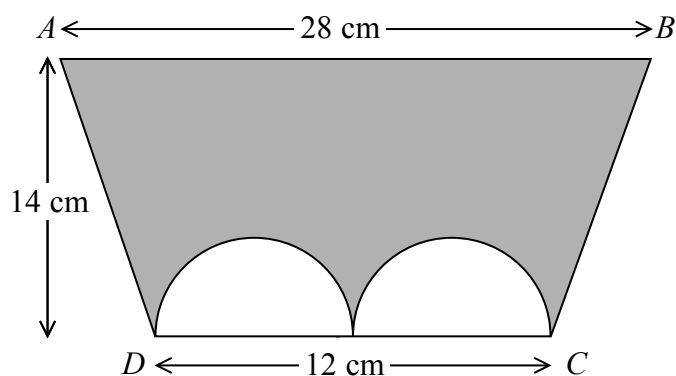
Give your answer in minutes correct to the nearest minute.

..... minutes

(Total for Question 4 is 4 marks)



- 5 The diagram shows a trapezium $ABCD$ and two identical semicircles.



The centre of each semicircle is on DC .

Work out the area of the shaded region.

Give your answer correct to 3 significant figures.

..... cm^2

(Total for Question 5 is 4 marks)

- 6 Asif is going on holiday to Turkey.

The exchange rate is $\text{£}1 = 3.5601$ lira.

Asif changes $\text{£}550$ to lira.

- (a) Work out how many lira he should get.
Give your answer to the nearest lira.

..... lira
(2)

Asif sees a pair of shoes in Turkey.
The shoes cost 210 lira.

Asif does not have a calculator.
He uses $\text{£}2 = 7$ lira to work out the approximate cost of the shoes in pounds.

- (b) Use $\text{£}2 = 7$ lira to show that the approximate cost of the shoes is $\text{£}60$

(2)

- (c) Is using $\text{£}2 = 7$ lira instead of using $\text{£}1 = 3.5601$ lira a sensible start to Asif's method to work out the cost of the shoes in pounds?

You must give a reason for your answer.

(1)

(Total for Question 6 is 5 marks)

7 Here are the first six terms of a Fibonacci sequence.

1 1 2 3 5 8

The rule to continue a Fibonacci sequence is,

the next term in the sequence is the sum of the two previous terms.

(a) Find the 9th term of this sequence.

.....
(1)

The first three terms of a different Fibonacci sequence are

a b $a + b$

(b) Show that the 6th term of this sequence is $3a + 5b$

.....
(2)

Given that the 3rd term is 7 and the 6th term is 29,

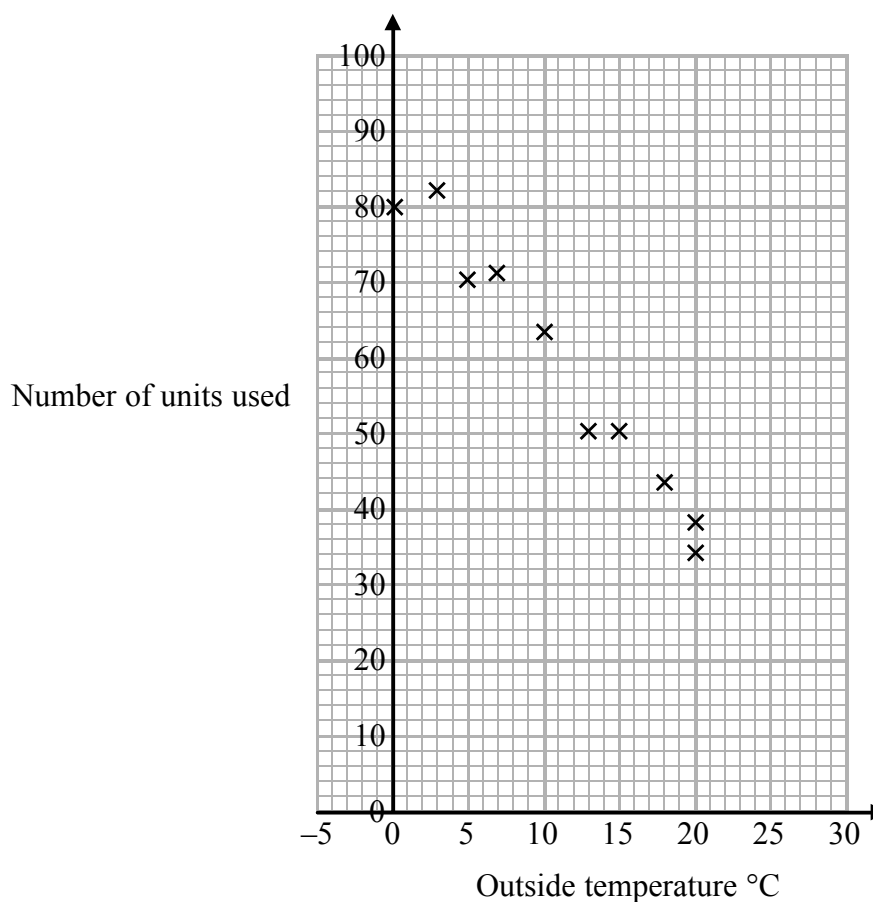
(c) find the value of a and the value of b .

.....
(3)

(Total for Question 7 is 6 marks)

- 8 In a survey, the outside temperature and the number of units of electricity used for heating were recorded for ten homes.

The scatter diagram shows this information.



Molly says,

“On average the number of units of electricity used for heating decreases by 4 units for each °C increase in outside temperature.”

- (a) Is Molly right?

Show how you get your answer.

(3)

- (b) You should **not** use a line of best fit to predict the number of units of electricity used for heating when the outside temperature is 30 °C.

Give one reason why.

(1)

(Total for Question 8 is 4 marks)