

Mock Grade 4

Maths

Booklet 4

Paper 3H
Calculator

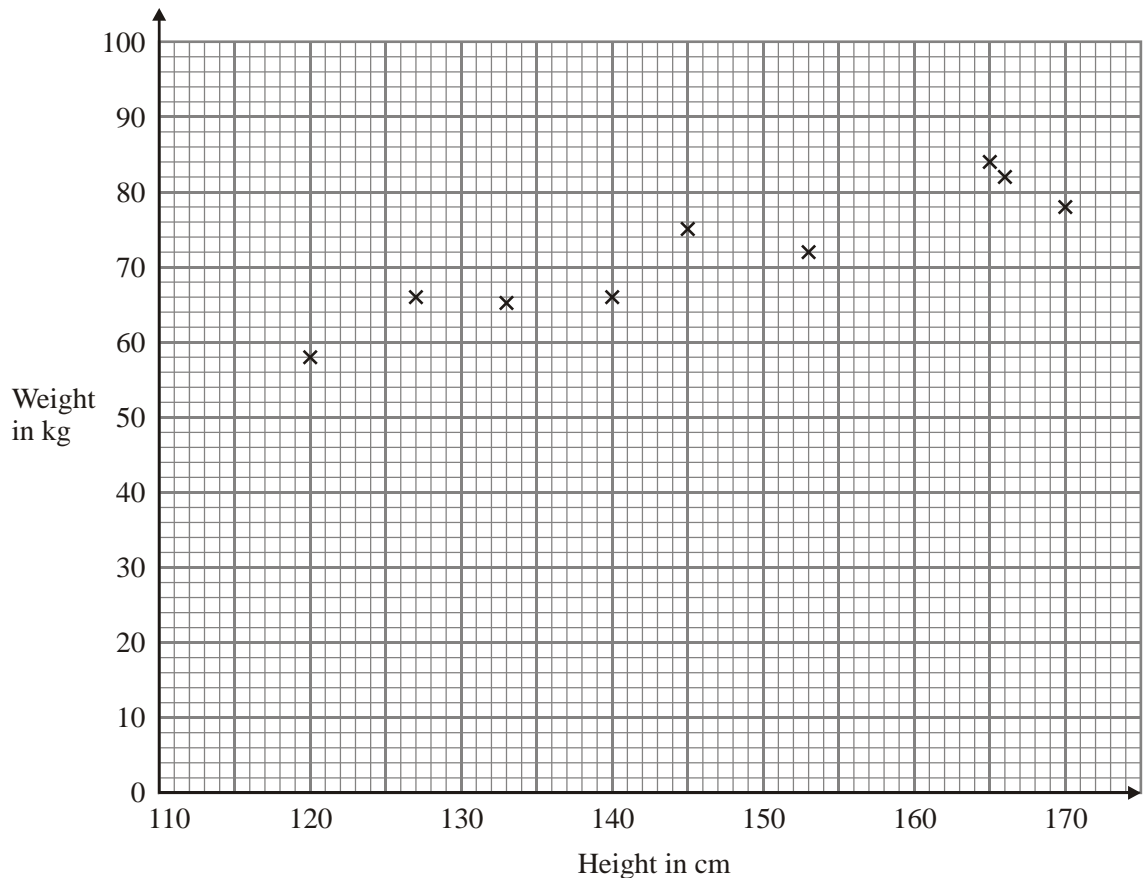
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Answer ALL questions.

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 height and the weight for nine students.



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

.....
(1)

The weight of another student is 80 kg.

- (b) Estimate the height of this student.

..... cm
(2)

Alfie says,

“My weight is 40 kg and I'm 150 cm, so I am an outlier”

(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 = 11 : 3 : 1

Natalie needs to make 8400 g of potato cakes.

Cheese costs £2.50 for 300 g.

Work out the cost of the cheese needed to make 8400 g of potato cakes.

£.....

(Total for Question 2 is 4 marks)

3 (a) Write 8.3×10^7 as an ordinary number.

.....
(1)

(b) Write 0.00018 in standard form.

.....
(1)

(c) Work out $3.8 \times 10^5 + 6.3 \times 10^6$
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 8100 litres of water.

Company **A** supplies water at a rate of 15 litres in 2 minute 40 seconds.

Company **B** supplies water at a rate of 1.4 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.

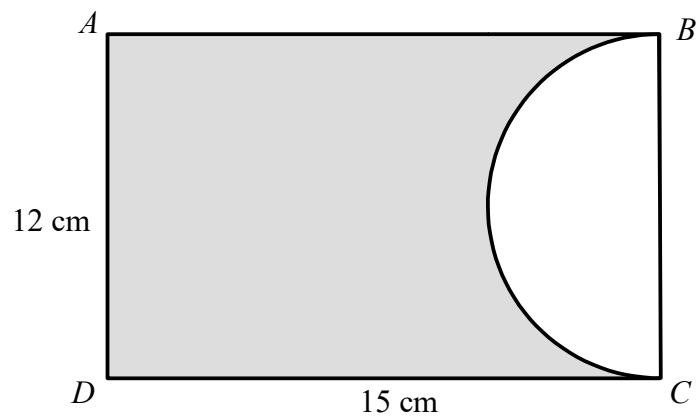
How much more time?

Give your answer in minutes correct to the nearest minute.

..... minutes

(Total for Question 4 is 4 marks)

- 5 The diagram shows a rectangle, ABCD, and a semi circle.
BC is the diameter of a semi circle.



Calculate the percentage of the area of the rectangle that is shaded.
Give your answer correct to 1 decimal place.

..... cm²

(Total for Question 5 is 4 marks)

6 Asif is going on holiday to Turkey.

The exchange rate is $\text{£}1 = 4.1561$ lira.

Asif changes $\text{£}472$ 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 560 lira.

Asif does not have a calculator.
He uses $\text{£}10 = 40$ lira to work out the approximate cost of the shoes in pounds.

- (b) Use $\text{£}10 = 40$ lira to show that the approximate cost of the shoes is $\text{£}140$

(2)

- (c) Is using $\text{£}10 = 40$ lira instead of using $\text{£}1 = 4.1561$ 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 five terms of a geometric sequence.

$$1 \quad -3 \quad 9 \quad -27 \quad 81$$

(a) Find the 8th term of this sequence.

.....
(1)

The first three terms of a different geometric sequence are

$$a \quad 2a^2 \quad 4a^3$$

(b) Show that the 5th term of this sequence is $16a^5$

(2)

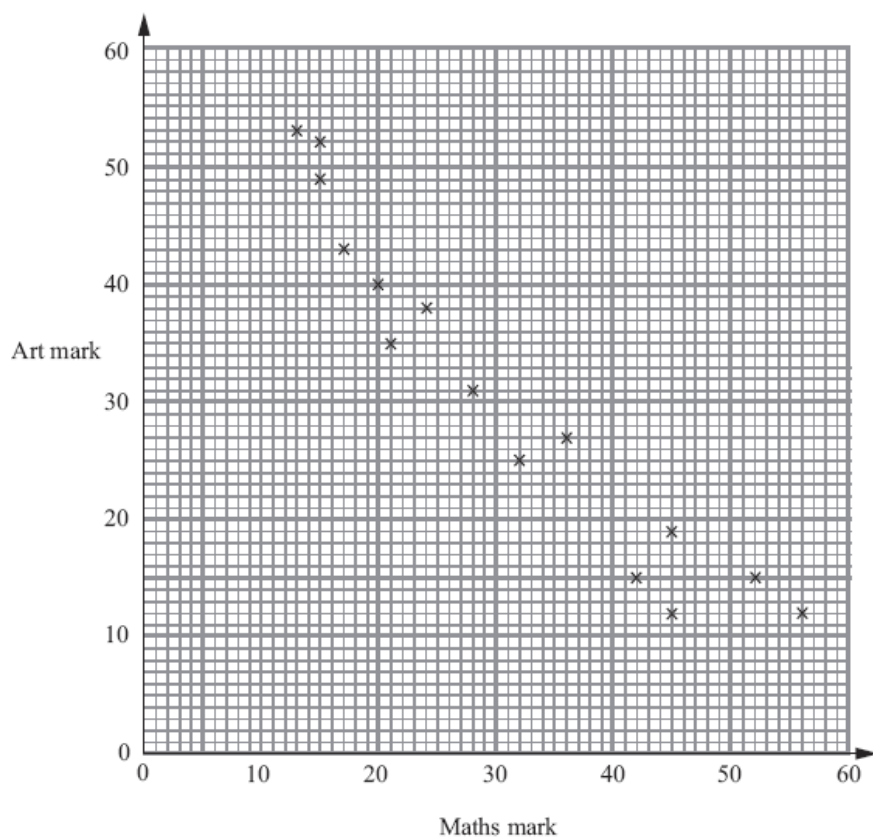
Given that the 3rd term is 0.5

(c) find the value of a .

.....
(3)

(Total for Question 7 is 6 marks)

- 8 The scatter graph shows the maths mark and the art mark for each of 15 students.



Molly says,

“On average the number of marks for art decreases by 1 mark for each increase in the number of marks for maths.”

- (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 marks in maths when the number of marks for art is 60.

Give one reason why.

(1)

(Total for Question 8 is 4 marks)