

Write your name here

Surname	Other names
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Centre Number

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Candidate Number

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Edexcel GCSE

Applications of Mathematics
Unit 1: Applications 1
For Approved Pilot Centres ONLY

Foundation Tier

Mock Exam Paper Time: 1 hour 45 minutes	Paper Reference 5AM1F/01
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You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser, calculator. Tracing paper may be used.

Total Marks

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Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided – *there may be more space than you need.*
- **Calculators may be used.**
- If your calculator does not have a π button, take the value of π to be 3.142 unless the question instructs otherwise.



Information

- The total mark for this paper is 100.
- The marks for **each** question are shown in brackets – *use this as a guide as to how much time to spend on each question.*
- Questions labelled with an **asterisk** (*) are ones where the quality of your written communication will be assessed – *you should take particular care on these questions with your spelling, punctuation and grammar, as well as the clarity of expression.*

Advice

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

Turn over ►

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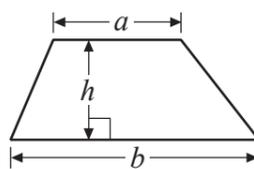
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GCSE Mathematics 2AM01

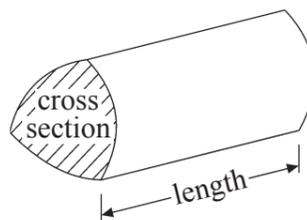
Formulae: Foundation Tier

**You must not write on this formulae page.
Anything you write on this formulae page will gain NO credit.**

Area of trapezium = $\frac{1}{2}(a+b)h$



Volume of prism = area of cross section \times length



Answer ALL questions.

Write your answers in the spaces provided.

You must write down all stages in your working.

1 This table shows some information about some pens which can be bought in a shop.

Pen	Price	Black	Colours	Chrome	Refills
Trudier	£4.99		✓		
Vector	£4.92	✓			✓
Jotter	£4.85			✓	
Pilot	£2.35		✓	✓	
Fountain	£1.92	✓		✓	
Safari	£3.85		✓		✓
ZMBlack	£3.20	✓			✓

(a) Which pen can be bought in black or chrome?

.....
(1)

(b) Which pen costs more than £4 and has refills?

.....
(1)

(c) Work out the total cost of buying 4 Pilot pens.

£
(2)

Shams has £40 to buy as many pens as possible.

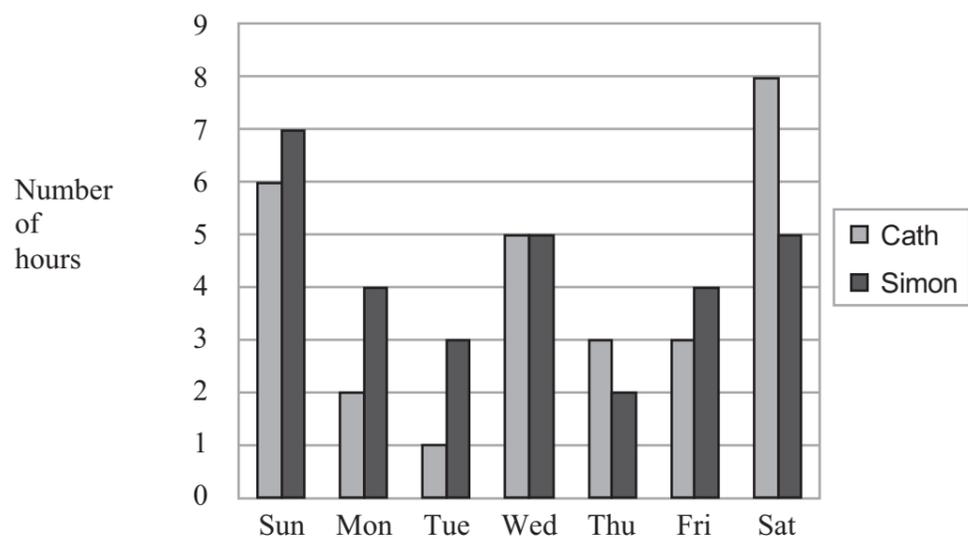
(d) What is the greatest number of pens he can buy?

.....
(2)

(Total for Question 1 is 6 marks)



2 Here is a dual bar chart showing the number of hours of TV that Cath and Simon watched each day last week.



(a) Write down the number of hours of TV watched by Cath on Monday.

..... hours
(1)

On one day Cath and Simon watched the same number of hours of TV.

(b) On which day?

.....
(1)

(c) (i) Work out the total number of hours of TV that Simon watched on Friday and Saturday.

..... hours

(ii) Who watched the greater number of hours of TV on Friday and Saturday?
Show your working.

.....
(4)

(Total for Question 2 is 6 marks)



3 The table shows the distances, in miles, between 4 towns.

London			
74	Portsmouth		
39	58	Reading	
97	41	57	Salisbury

(a) Write down the distance between London and Salisbury.

..... miles
(1)

(b) Which two towns are the least distance apart?

..... and
(1)

Nazim wants to drive from London to his home in Portsmouth.
On the way he wants to visit friends in Reading and in Salisbury.
He wants to plan his route so that he drives the least distance.

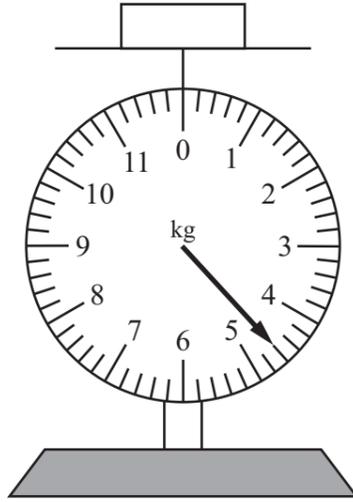
(c) Plan the route for Nazim, showing the least distance.

..... miles
(3)

(Total for Question 3 is 5 marks)



4



(a) Write down the weight shown on this scale.

..... kg
(1)

(b) (i) How many pounds are there in 1 kg?

..... pounds

The weight of a baby is 5 kg.

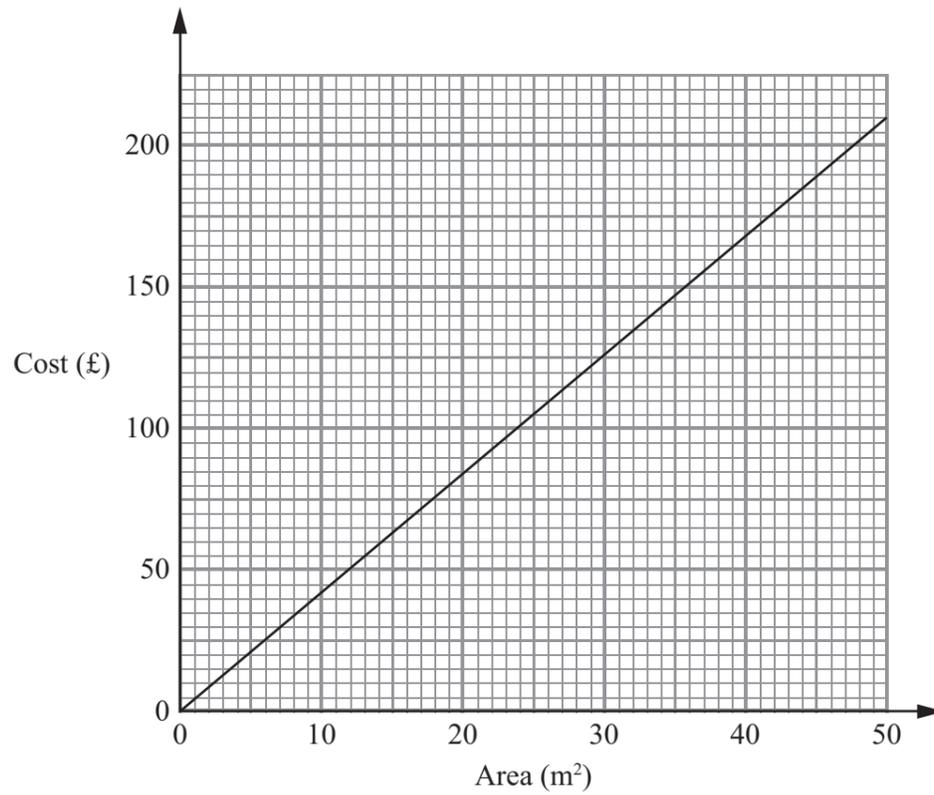
(ii) What is the weight of the baby in pounds?

..... pounds
(2)

(Total for Question 4 is 3 marks)



- 5 John cleans carpets.
The cost of cleaning a carpet depends on the area of the carpet.
John uses this graph to work out the cost of cleaning a carpet.



A carpet has an area of 30 m².

- (a) Use the graph to find the cost of cleaning this carpet.

£
(1)

It costs £150 to clean another carpet.

- (b) Use the graph to find the area of this carpet.

..... m²
(1)

A rectangular carpet is 8.6 m by 5 m.

- (c) Find the cost of cleaning this carpet.

£
(3)

(Total for Question 5 is 5 marks)



6 There were 20 ordinary car parking spaces in a car park.

The owners mark out the car park so that it now includes 7 wider spaces for disabled drivers.

The disabled parking spaces measure 3.6 m by 4.8 m.

The ordinary car parking spaces measure 2.4 m by 4.8 m.

The disabled car parking spaces replaced some of the ordinary car parking spaces.

How many parking spaces are there in the car park now?

.....
(Total for Question 6 is 4 marks)

7 Daniel is a school librarian.

He wants to record the types of book students borrow one lunchtime.

Design a suitable data collection sheet he could use.

.....
(Total for Question 7 is 3 marks)



8 Alison travels by car to her meetings.
Alison's company pays her 32p for each mile she travels.

One day Alison writes down the distance readings from her car.

Start of the day: 2430 miles
End of the day: 2658 miles

(a) Work out how much her company pays Alison for her day's travel.

£
(4)

The next day Alison travelled a total of 145 miles.

She travelled $\frac{2}{5}$ of this distance in the morning.

(b) How many miles did she travel during the rest of the day?

..... miles
(3)

(Total for Question 8 is 7 marks)



9 This number machine can be used to work out the total charge for hiring a trailer.

Hours hired \rightarrow $\boxed{\times 7}$ \rightarrow $\boxed{+30}$ \rightarrow Total charge in pounds.

On Monday, Jon hired a trailer for 4 hours.

(a) Work out Jon's total charge.

£
(2)

On Tuesday, Katy hired a trailer.
Katy's total charge was £51

(b) Work out the number of hours that Katy hired the trailer.

..... hours
(3)

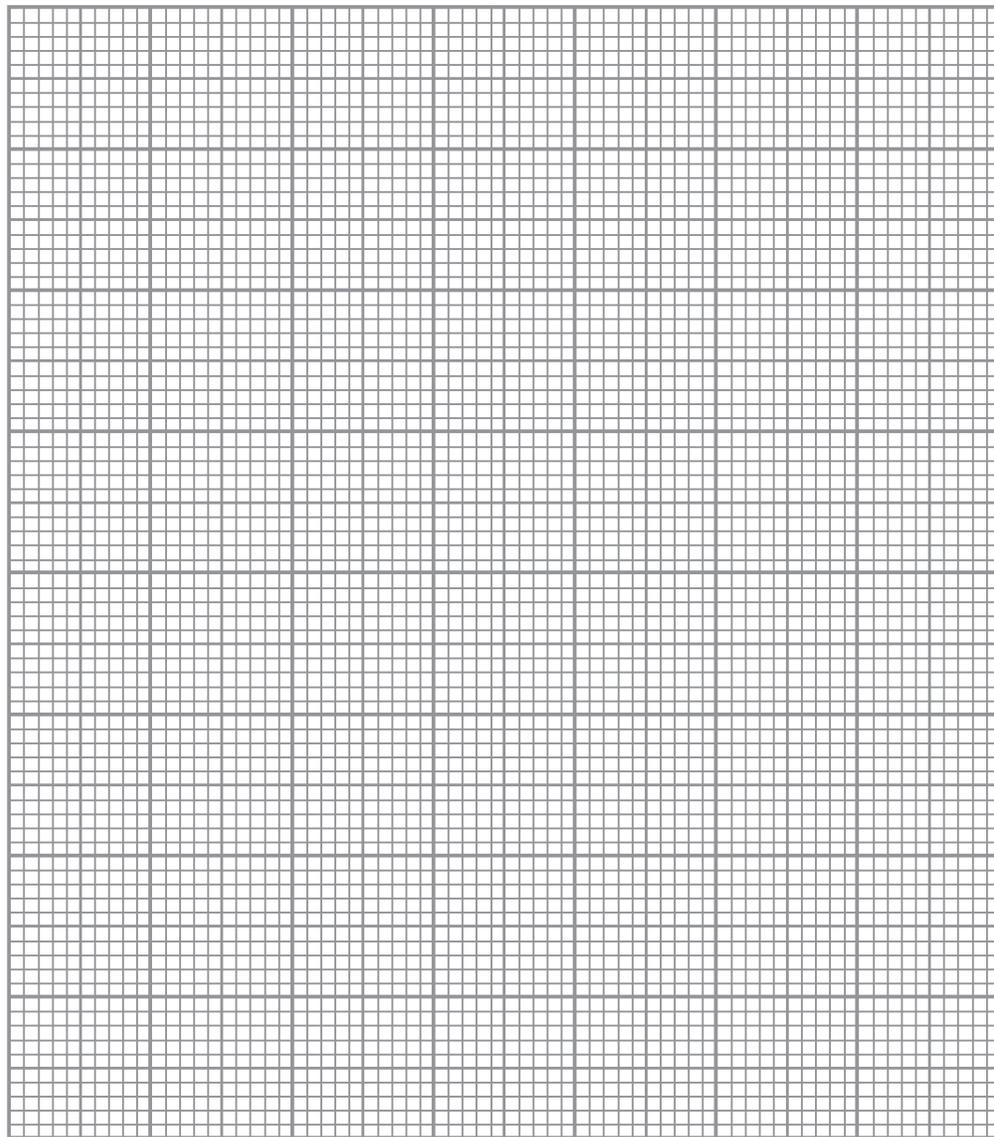
(Total for Question 9 is 5 marks)



***10** David and Emily each have a mobile phone.
The table shows the monthly amounts they paid.

	Sep	Oct	Nov	Dec
David	£24.40	£23.10	£25.80	£22.40
Emily	£25.10	£27.00	£25.40	£26.00

Show this information in a suitable graph or chart.



(Total for Question 10 is 4 marks)



11 A frame is in the shape of a triangle.

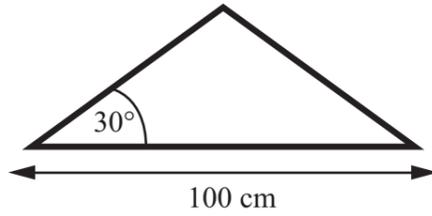


Diagram **NOT** accurately drawn

A larger similar frame is being made, which is twice the size of the above frame.

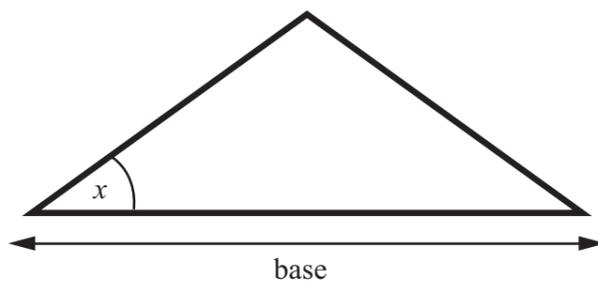


Diagram **NOT** accurately drawn

(a) (i) What will be the length of the base of the larger frame?

..... cm

(ii) What will be the size of the angle x in the larger frame?

.....
(2)

Another frame is made from lengths of wood as shown in the diagram below.

(b) Calculate the total length of wood needed for the frame.

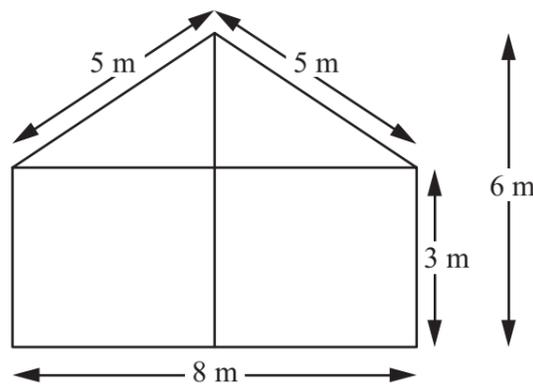


Diagram **NOT** accurately drawn

..... m
(3)

(Total for Question 11 is 5 marks)



- 12 A tin of dog food costs 50p.
A shop has a special offer on the dog food.

Special offer			
Pay for 3 tins and get 1 tin free			
			
50p	50p	50p	Free

Elber wants 12 tins of dog food.

- (a) Work out how much he pays.

£
(3)

9 of the 12 tins are labelled chicken.

- (b) Work out the percentage of the 12 tins that are labelled chicken.

..... %
(2)

The normal price of a dog kennel is £40
In a sale, the price of the dog kennel is reduced by 15%.

- (c) Work out the sale price of the dog kennel.

£
(3)

(Total for Question 12 is 8 marks)



- 13 Ali recorded the number of TVs sold in a shop on each of 40 days.
He used the information to complete the frequency table.

Number of TVs	Frequency
4	4
5	7
6	10
7	12
8	5
9	2

Ali said that the mode is 9
Ali is wrong.

- (a) Explain why.

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

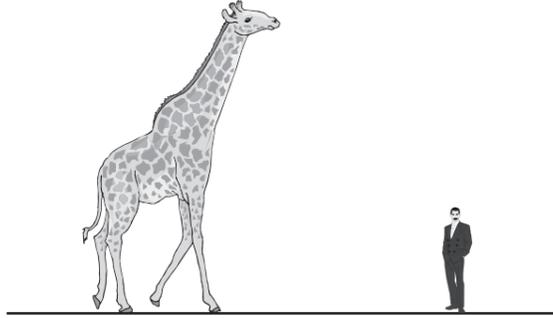
- (b) Calculate the total number of TVs sold in the 40 days.

.....
(2)

.....
(Total for Question 13 is 3 marks)



14



The picture shows a man standing next to a giraffe.
The man and the giraffe are drawn to the same scale.

(a) Write down an estimate for the height, in metres, of the man.

..... m
(1)

The entrance to the giraffe house in a zoo has a height of 5.4 m.

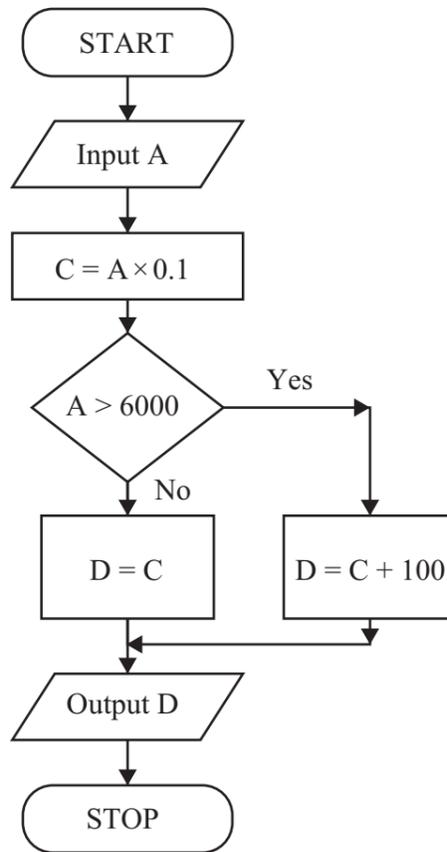
*(b) Is the entrance is high enough for the giraffe to get through without bending?

(3)

(Total for Question 14 is 4 marks)



15 Jake is the manager of a shop.
 He pays his salesmen a commission (£C) of 10% on the value of their sales (£A)
 Jake may also pay them a bonus.
 Jake uses this flowchart to work out a salesman's pay (£D).



(a) Calculate the pay when

(i) A = 5000

£

(ii) A = 7000

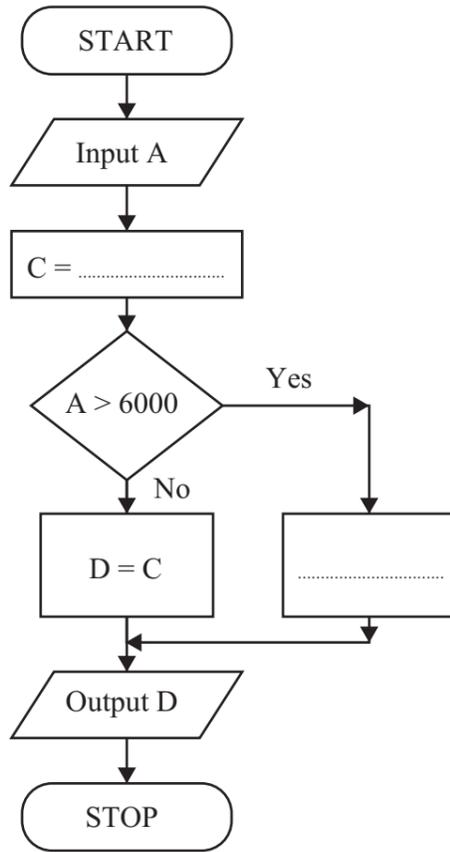
£

(2)



Jake decides to change what he pays his salesmen.
He now pays salesmen a commission of 15%.
The bonus is now half the original bonus.

(b) Complete the new flowchart.

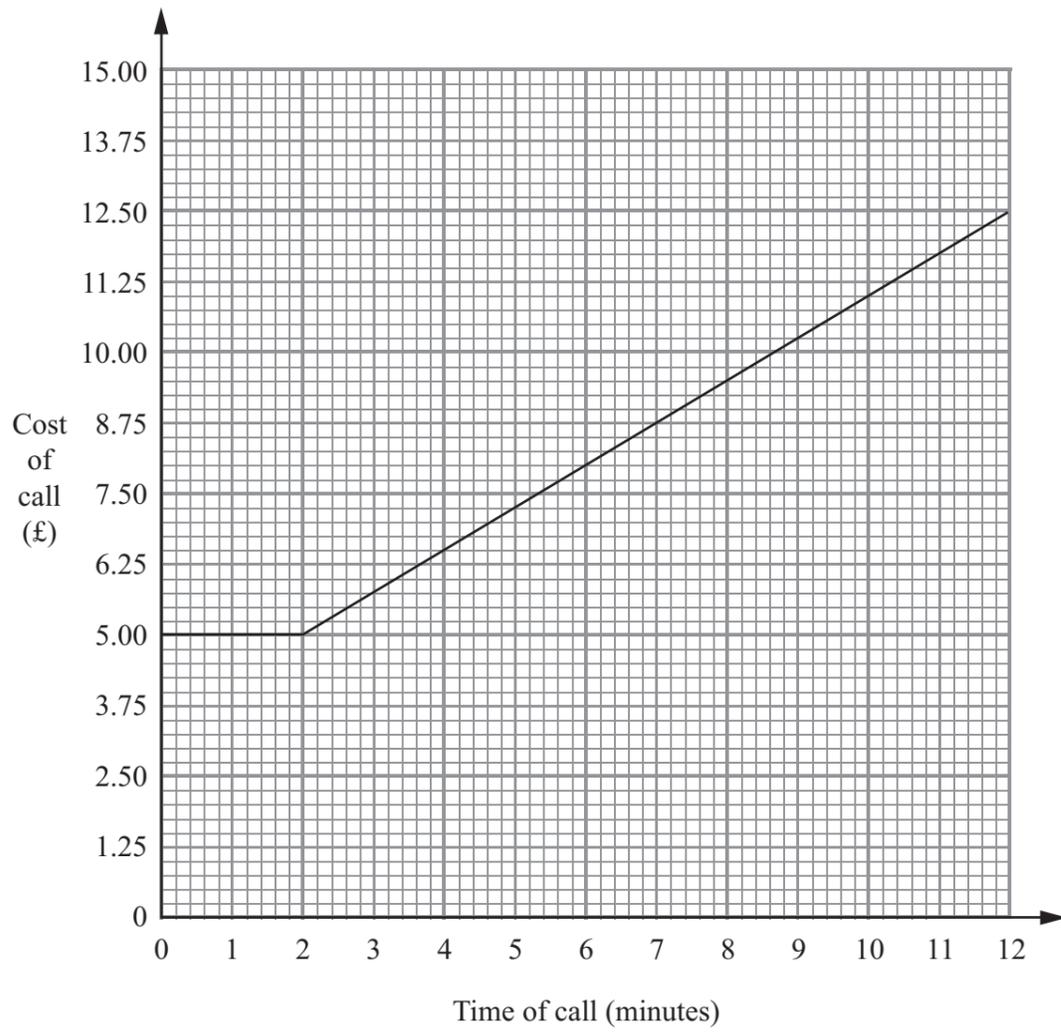


(3)

(Total for Question 15 is 5 marks)



16 The graph shows some information about the cost of making a call using a CN satellite phone.



(a) Find the cost for making a call lasting 6 minutes.

£
(1)

(b) (i) Find the gradient of the graph from 2 minutes to 12 minutes.

.....



(ii) For calls lasting more than 2 minutes, what is the cost of each additional minute the phone is used?

.....
(3)

The CommG is a different satellite phone.
The cost of using the CommG phone is 2p for every second.

(c) On the grid, draw a graph to represent this cost, for 0 minutes to 12 minutes.

(2)

The CN phone is cheaper than the CommG phone for calls over a certain length of time.

(d) What length of time?

..... minutes

(2)

(Total for Question 16 is 8 marks)



***17** Julie went on holiday to Miami.
The price of a hat in Miami was \$25.20

Julie then went to Paris.
She finds the same hat on sale in Paris for €19.80

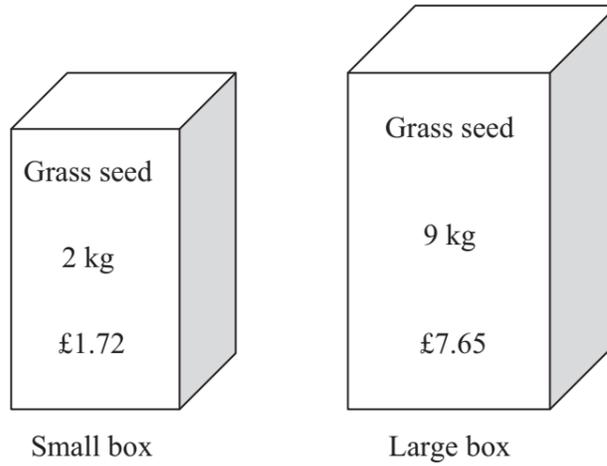
The exchange rates were £1 = \$1.40 and £1 = €1.08

In which of the two places was the hat the cheaper?
Show working to explain your answer.

(Total for Question 17 is 3 marks)



*18 Grass seed is sold in two sizes of box.



A small box contains 2 kg of grass seed and costs £1.72
A large box contains 9 kg of grass seed and costs £7.65

Which size of box gives the better value for money?
Explain your answer.
You must show all your working.

(Total for Question 18 is 3 marks)



19 Fiona is organising a barbecue at a summer fair.
She needs buns and burgers.

Buns are sold in packs. There are 40 buns in each pack.
Burgers are sold in packs. There are 24 burgers in each pack.
Fiona buys exactly the same number of buns as burgers.

What is the least number of packs of buns and least number of packs of burgers she buys?

..... packs of buns

..... packs of burgers

(Total for Question 19 is 3 marks)



20 In Great Britain Fred drives his car 70 miles.
In Spain Pablo drives his car 120 kilometres.

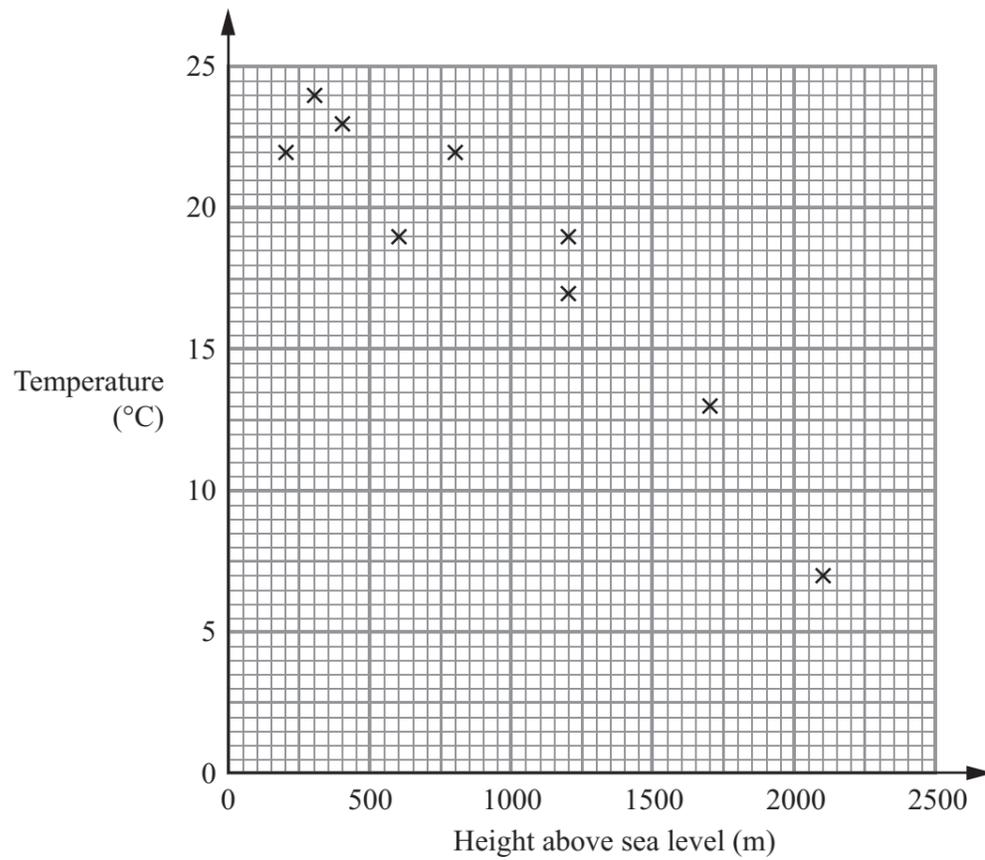
Who drives the furthest?
You must show your working to explain your answer.

(Total for Question 20 is 3 marks)



21 The scatter graph shows information from some weather balloons released from a field.

For a particular time, it shows the height above sea level (m) of each weather balloon and the temperature ($^{\circ}\text{C}$) recorded for that height.



The table shows this information for two more weather balloons.

Height of weather balloon above sea level (m)	1000	500
Temperature ($^{\circ}\text{C}$)	20	22

(a) Plot this information on the scatter graph.

(1)

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

.....
(1)

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

(1)



Another weather balloon is 1800 metres above sea level.

(d) Estimate the temperature at this height.

..... °C
(1)

(Total for Question 21 is 4 marks)

22 Sabah uses a spreadsheet to record the exam marks of a group of students.
The exam has two papers:

Paper 1 is out of 15 marks.
Paper 2 is out of 20 marks.

The final mark for the exam is worked out by

Adding the mark on Paper 2 to double the mark on Paper 1

The final mark is out of 50
Sabah wants to use the spreadsheet to calculate the final marks.

	A	B	C	D	E
1	Name	Paper 1	Paper 2	Final mark	Percentage
2					

(i) Write down a formula for cell D2

.....

Sabah also wants to change the final marks to a percentage.

(ii) Write down a formula for cell E2

.....

(Total for Question 22 is 3 marks)

TOTAL FOR PAPER IS 100

