

Write your name here

Surname

Other names

Centre Number

Candidate Number

Edexcel GCSE

Applications of Mathematics

Unit 1: Applications 1

Foundation Tier

Practice Paper

Time: 1 hour 45 minutes

Paper Reference

5AM1F/01

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

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 ►

W41056A

©2012 Pearson Education Ltd.

2/2



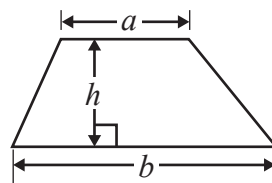
PEARSON

GCSE Mathematics 2AM01

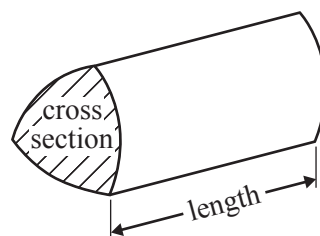
Formulae: Foundation Tier

**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 Here is a cheque.

Anybank	30 – 40 – 50	
Edexcel Branch, London	Date 1.4.2011	
Pay Mr K O'Brien	<table border="1"><tr><td>£</td></tr></table>	£
£		
.....		
.....		
Anybank	Mr Z Stardust	
Cheque No 004444	Sort Code 30;4050	Account No 314159268

Mr Stardust writes a cheque for Mr K O'Brien for one thousand eight hundred and sixty eight pounds.

(a) Write the amount of money paid to Mr O'Brien in each of the correct spaces on the cheque.

(2)

Mr O'Toole put the money in his bank.

He already had £836 in his account.

(b) How much will he have in his account now?

£

(1)

(Total for Question 1 is 3 marks)



2 $\frac{1}{4}$ million people live in a city.

150 000 of these are adults.

How many children live in the city?

.....
(Total for Question 2 is 2 marks)

3 Jim has two bags.

In the first bag there are 200 coins.

In the second bag there are 175 coins

The weight of each coin is 32 grams.

(a) Work out the total weight of the coins. Give your answer in grams.

..... grams
(3)

(b) Write your answer to part (a) in kilograms.

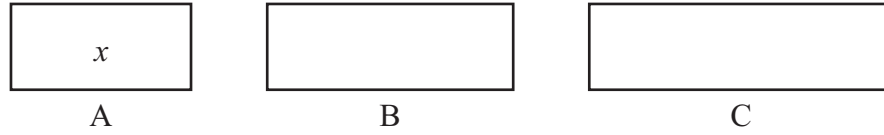
..... kg
(1)

(Total for Question 3 is 4 marks)



4

Diagram **NOT**
accurately drawn



Here are 3 boxes.

There are x marbles in box A.

There are twice as many marbles in box B as in box A

There are three times as many marbles in box C as in box A.

- (a) Write down an expression, in terms of x , for the total number of marbles in the 3 boxes.

Give your answer in its simplest form.

.....
(2)

The total number of marbles in the 3 boxes is 60

- (b) Work out the number of marbles in box C.

.....
(2)

(Total for Question 4 is 4 marks)





*5 Here is Jim's bank statement for the month of April up to the 28th April.

Date	Deposit(£)	Withdrawal(£)	Balance(£)
1.4.2012			3420.26
6.4.2012		200.00	3220.26
13.4.2012	312.51		3532.77
20.4.2012		250.00
28.4.2012	1250.00	

Jim wants to know whether he can afford to pay £4500 for a car.

Does he have enough money in his account on 28th April?

(Total for Question 5 is 3 marks)



6 Julie is going to make a patio from square slabs.
 The slabs are either white or grey.
 Each slab is a square of side 1 m.

Here is a drawing of the patio.

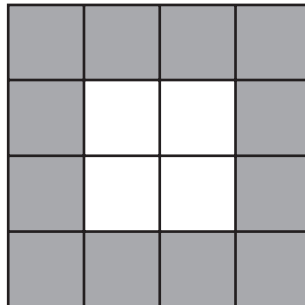


Diagram **NOT**
 accurately drawn

(a) What fraction of the patio is covered with white slabs?
 Give your fraction in its simplest form.

.....
 (2)

(b) Work out the perimeter of the white region of the patio.

..... m
 (1)

(Total for Question 6 is 3 marks)



7 A group of people were asked from where they got most of their news.

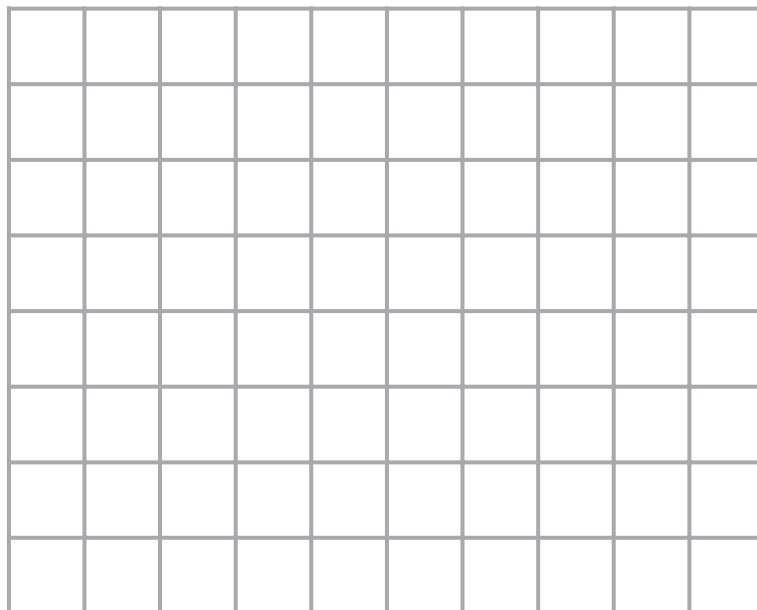
Here are their replies.

Newspaper	Television	Internet	Television	Radio
Radio	Television	Television	Radio	Newspaper
Television	Radio	Radio	Internet	Newspaper
Television	Internet	Television	Newspaper	Radio

(a) Show this information in a tally chart.

(2)

(b) Draw a suitable chart or diagram to show this information.

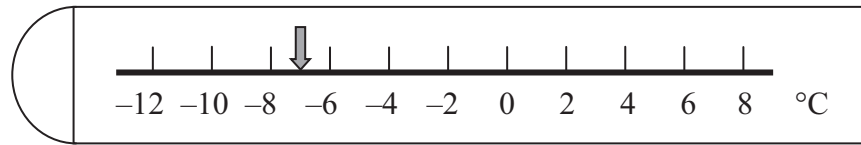


(3)

(Total for Question 7 is 5 marks)



- 8 Here is a temperature scale on a freezer.
The arrow shows the temperature in the freezer.



- (a) Write down the temperature to which the arrow points.

.....°C
(1)

The temperature in the freezer should be -12°C .

- (b) How many degrees C does the temperature in the freezer have to fall to be -12°C ?

.....°C
(1)

On Monday the temperature in the freezer was -12°C .

The freezer then broke down.

By Tuesday the temperature of the freezer had risen to 4°C .

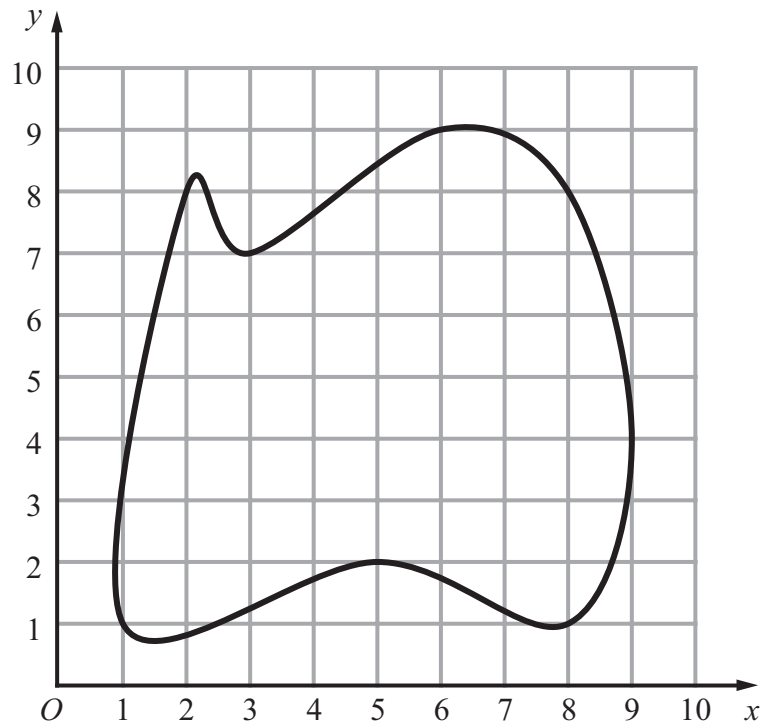
- (c) How many degrees C had the temperature risen from Monday to Tuesday?

.....°C
(1)

(Total for Question 8 is 3 marks)



9 Here is a treasure map for a game.



Here are the instructions to begin the game.

Start from the point $A(5, 2)$.

From A , move up 4 parallel to the y -axis to the point B .

From B , move right 2 parallel to the x -axis to the point C .

(a) Mark the points A , B and C on the grid.

(3)

(b) Write down the coordinates of the point C .

(.....,)
(1)

M is the midpoint of AC .

(c) Find the coordinates of M .

(.....,)
(2)

(Total for Question 9 is 6 marks)





*10 Here is a sketch of Alan's farm in Australia.
All the sides are straight lines.

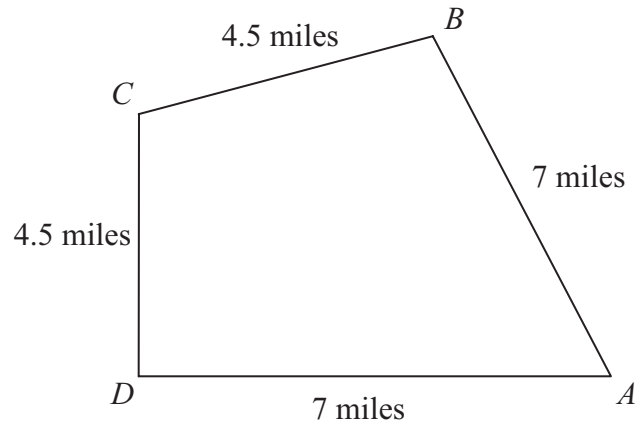


Diagram **NOT** accurately drawn

(a) Write down the mathematical name of the quadrilateral $ABCD$.

.....
(1)

Alan wants to put a fence along all 4 sides of the farm.

100 metres of fencing costs 18 dollars.

1 mile = 1.6 km

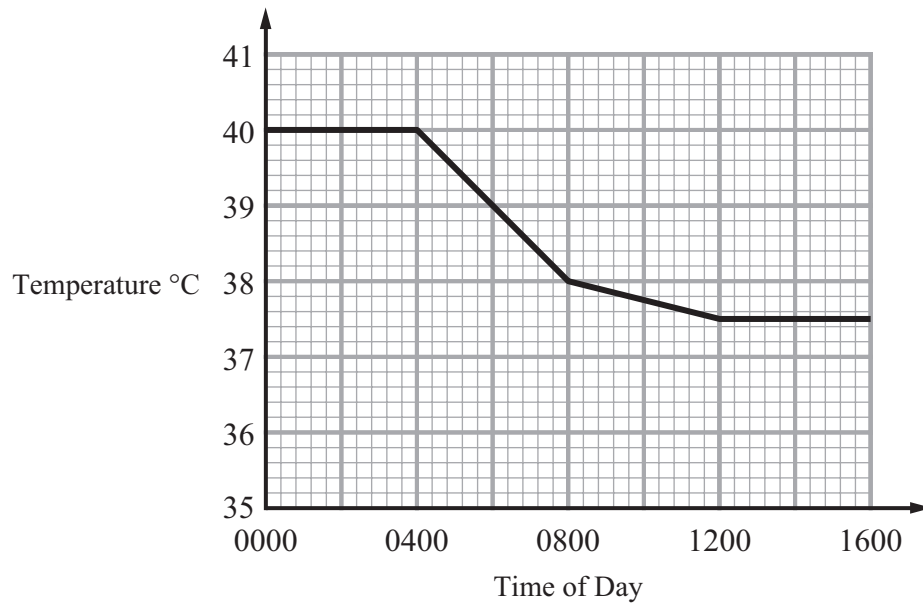
(b) Work out the total cost of the fencing for all 4 sides of the farm.

..... dollars
(6)

(Total for Question 10 is 7 marks)



11 Here is a temperature chart.



It gives information about Bill's temperature during part of Tuesday.

(a) Use the graph to estimate the time at which Bill's temperature 38°C.

.....
(1)

(b) How much did Bill's temperature fall between 0000 and 1200?

.....°C
(1)

(c) Use the graph to estimate how long on Tuesday was Bill's temperature between 38°C and 39°C.

..... hours
(2)

(Total for Question 11 is 4 marks)



12 The diagram represents the end of a house.

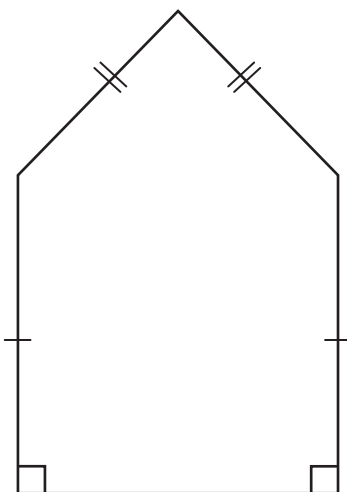


Diagram **NOT** accurately drawn

(a) Draw the line of symmetry of the end of the house.

(1)

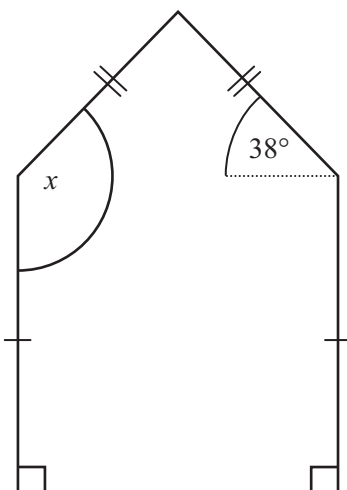


Diagram **NOT** accurately drawn

The angle between the roof and the horizontal is 38° .

(b) Work out the size of angle x .

.....
(2)



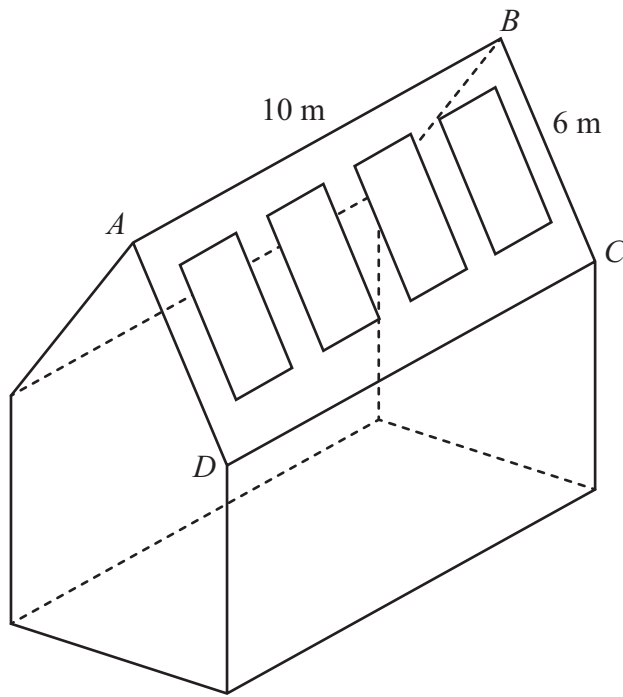


Diagram **NOT**
accurately drawn

$ABCD$ is one side of the roof of the house.
 $ABCD$ is a rectangle.

$AB = 10\text{ m}$.
 $BC = 6\text{ m}$.

40% of the rectangle is covered with 4 identical solar panels in the shape of rectangles.

*(c) Show that 2 m by 3 m rectangles would be suitable.

(4)

(Total for Question 12 is 7 marks)



13 A surgery kept a record of the number of patients attending on Monday.

There were 25 adults.

There were 26 male children.

18 of the adults were men.

The total number of patients was 60

(a) Complete the two-way table.

	Male	Female	Total
Adult			
Child			
Total			

(3)

(b) What percentage of the total number of patients attending the surgery on Monday were girls?

..... %

(2)

(Total for Question 13 is 5 marks)



14 The time sheet shows the number of hours that Sally worked Monday to Saturday during one week.

	Mon	Tues	Wed	Thurs	Fri	Sat	Sun
Hours	4	8	4	8	4	$5\frac{1}{2}$	

Sally started work on Sunday at 08:30 and finished at 13:00

Monday to Friday, she is paid £6.92 for each hour she works.

On Saturday and Sunday, she is paid time and a half for each hour she works.

Work out the total amount of money that Sally is paid for working Monday to Sunday.

£

(Total for Question 14 is 6 marks)



15 Tom's cat eats $\frac{1}{4}$ of a tin of cat food every day.

Tom has $2\frac{1}{2}$ tins of cat food.

(a) How many days will this cat food last?

.....
(2)

Tom can get cat food from the market or from the supermarket.

The market

500 gram tins

Cost of a tin is £1.28

The supermarket

300 gram tins

Get 3 for the price of 2

Cost of a tin is £1.08

The quality of the cat food in the market is the same as the quality of cat food in the supermarket.

*(b) Which gives the best deal?

(4)

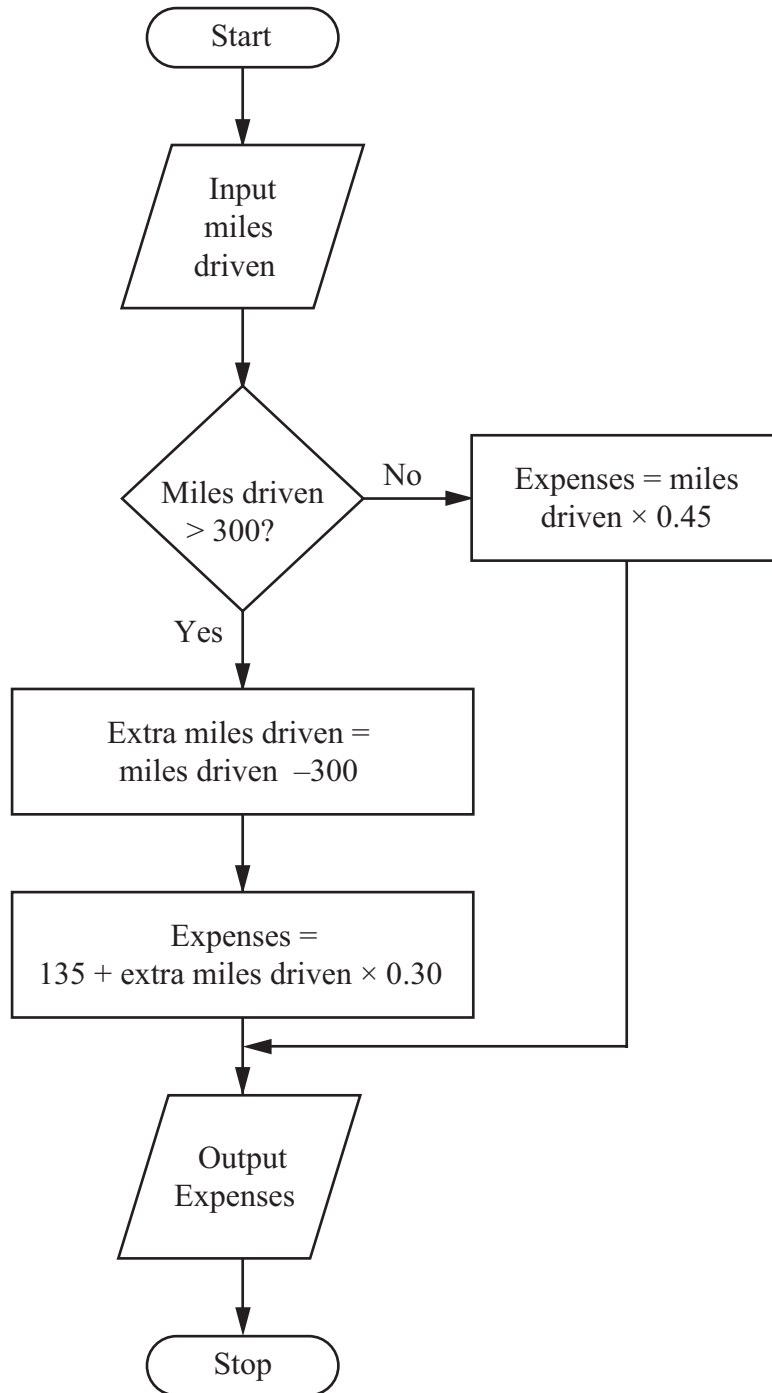
(Total for Question 15 is 6 marks)



BLANK PAGE



16 A saleswoman gets weekly travelling expenses for all the miles she drives for her work. The expenses are calculated by using the flowchart.



In the first week of the month, the saleswoman drove 250 miles.

(a) Use the flowchart to work out her expenses for the first week of the month.

£
(2)

In the second week of the month, the saleswoman drove 400 miles.

(b) Use the flowchart to work out her expenses for the second week of the month.

£
(2)

Jim said 'If you drive twice as far then you always get twice the expenses'.

(c) Is Jim correct?

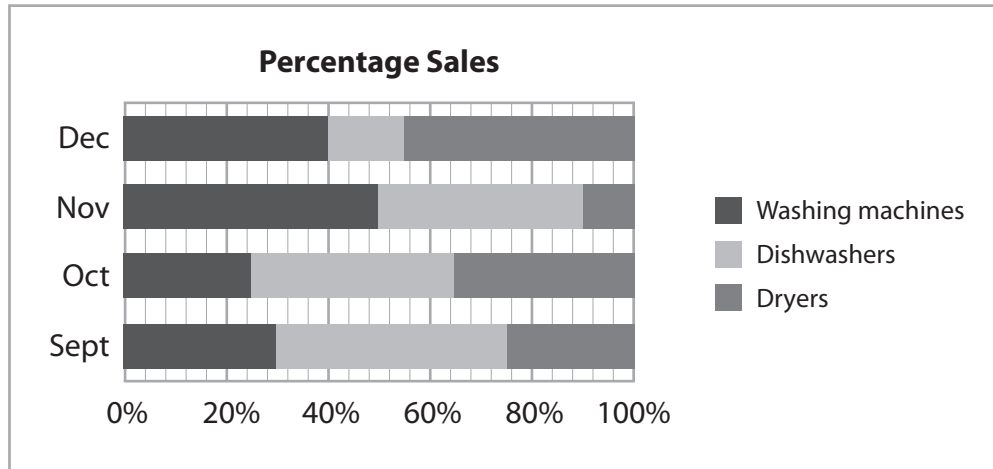
You must explain your answer.

.....
(2)

(Total for Question 16 is 6 marks)



17



The chart gives information about the value of sales from a large shop.

In September, sales of washing machines were 30% of the total value of sales.

- (a) Find an estimate for the percentage of the total value of sales that washing machines were for October.

.....
(1)

- (b) Find an estimate for the percentage of the total value of sales that dishwashers were for November.

.....
(2)

Jim says that the chart shows that the value of the sales of dryers in December was more than the value of the sales of dryers in November.

Jim could be wrong.

- (c) Explain why.

(1)

The total value of sales in September was £8000.

- (d) Find an estimate for the value of sales of dryers in September.

£
(3)

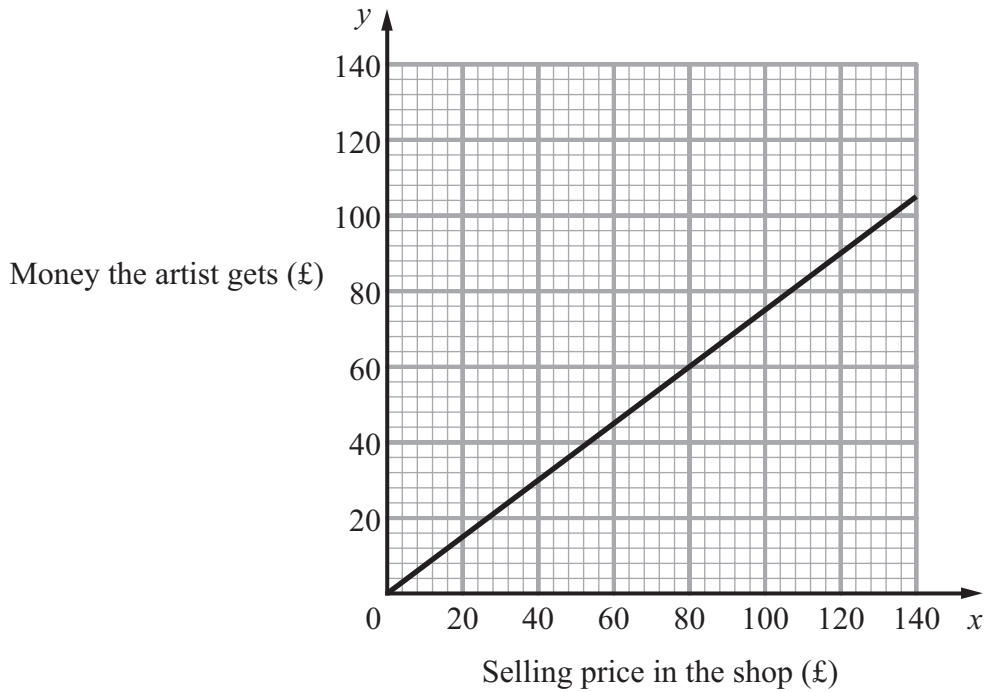
(Total for Question 17 is 7 marks)



18 Artforum is a shop that sells pictures painted by artists.

The shop makes a profit on a picture by paying the artist less than what the shop sold it for.

The graph shows the relationship between the selling price in the shop and the money the artist gets.



(a) Find the gradient of the graph.

.....
(2)

Pablo and Frida are two artists.

The shop sells one of Pablo's pictures for £100

The shop sells one of Frida's pictures for £160

(b) Find an estimate of how much more money Frida should get than Pablo should get.

£
(3)

(Total for Question 18 is 5 marks)



19 Michael is going to make a logo for a company.
Here is his drawing of the logo.

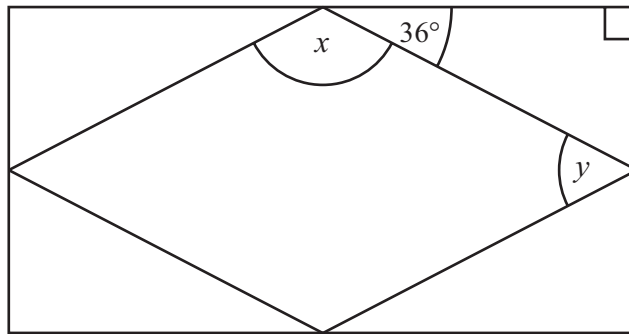


Diagram **NOT** accurately drawn

The logo consists of a quadrilateral inside a rectangle.

The logo has 2 lines of symmetry.

(a) Give the mathematical name for the quadrilateral inside the rectangle.

.....
(1)

(b) Work out the size of the angle marked x .

.....
(2)

*(c) Work out the size of angle y .

Give reasons for your answer.

.....
(3)

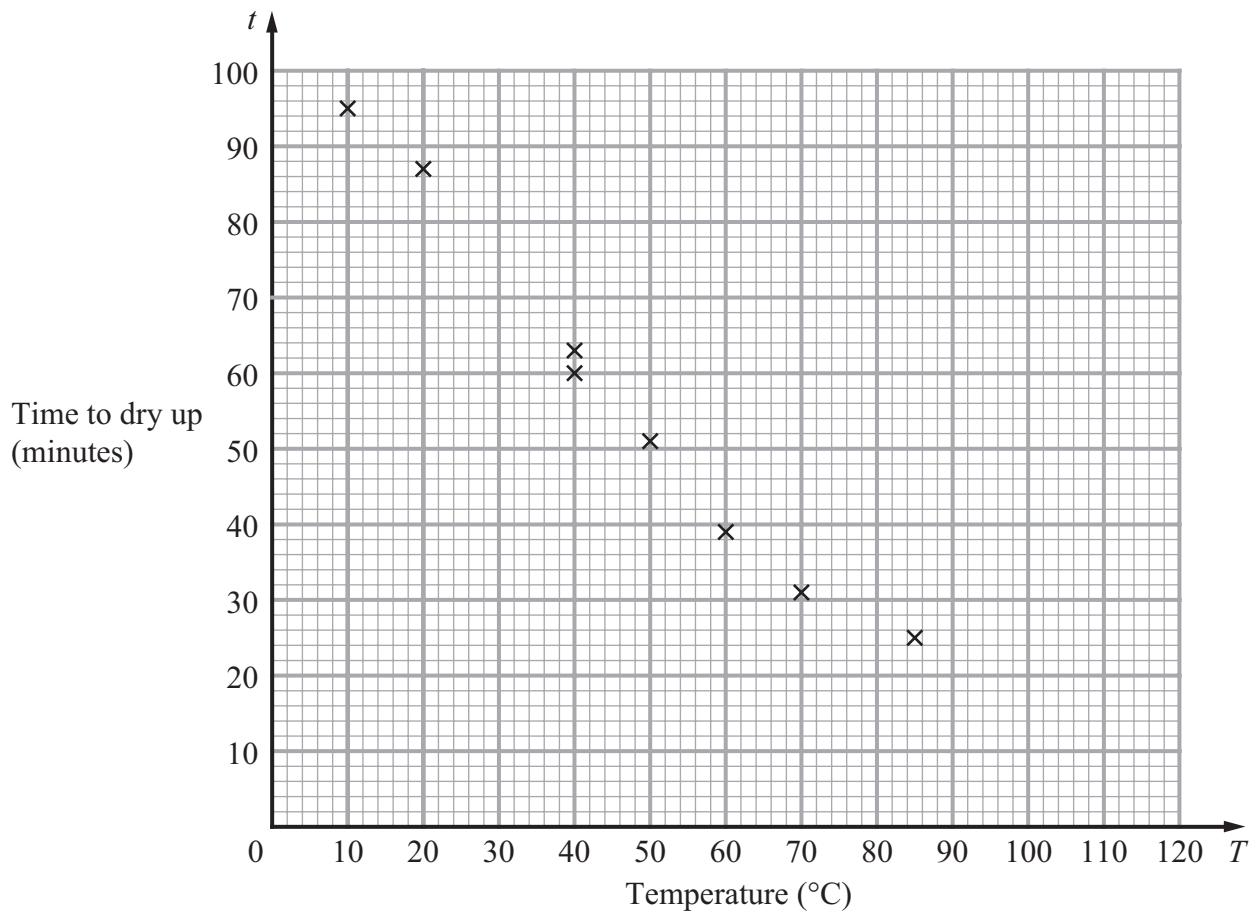
(Total for Question 19 is 6 marks)



BLANK PAGE



20 Bill carried out an investigation into the times t minutes it took puddles of the same size to dry up at different temperatures $T^\circ\text{C}$. He drew this scatter diagram for eight of his experiments.



In 2 other experiments, Bill got the following results.

Temperature ($T^\circ\text{C}$)	100	80
Time (t minutes)	10	26

(a) Plot these results on the scatter diagram.

(2)

Bill starts one more experiment. He uses a temperature of 30°C .

(b) Estimate the time it will take for the puddle to dry up.

..... minutes
(2)



Bill should not use the graph to estimate times for temperatures above 115°C.

(c) Explain why not.

.....
.....

(1)

(Total for Question 20 is 5 marks)

21

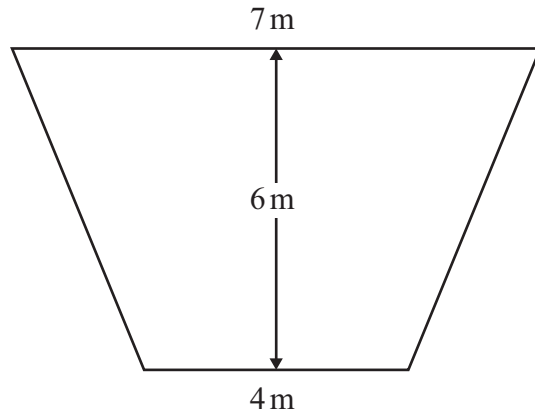


Diagram **NOT** accurately drawn

The diagram shows a floor.

The floor is in the shape of a trapezium.

The floor is to be completely covered in carpet.

1 m² of carpet costs £8.99

Work out the total cost of the carpet needed to completely cover the floor.

£

(Total for Question 21 is 3 marks)

TOTAL FOR PAPER IS 100 MARKS





BLANK PAGE

