Centre Number						Candidate Number				
Surname										
Other Names										
Candidate Signature										

For Examiner's Use	
Examiner's Initials	
Pages	Mark
3	
4 – 5	
6 – 7	
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12 – 13	
14 – 15	
16 – 17	
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20 – 21	
22 – 23	
TOTAL	

AQA

General Certificate of Secondary Education
Foundation Tier
June 2015

Mathematics (Linear) 4365/1F

Paper 1

F

Thursday 4 June 2015 9.00 am to 10.15 am

For this paper you must have:
- mathematical instruments.

You must **not** use a calculator.

Time allowed
- 1 hour 15 minutes

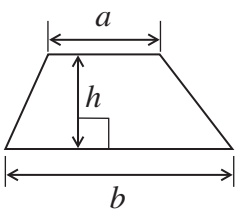
Instructions
- Use black ink or black ball-point pen. Draw diagrams in pencil.
- Fill in the boxes at the top of this page.
- Answer **all** questions.
- You must answer the questions in the spaces provided. Do not write outside the box around each page or on blank pages.
- Do all rough work in this book.

Information
- The marks for questions are shown in brackets.
- The maximum mark for this paper is 70.
- The quality of your written communication is specifically assessed in Questions 1, 6 and 10. These questions are indicated with an asterisk (*).
- You may ask for more answer paper, tracing paper and graph paper. These must be tagged securely to this answer book.

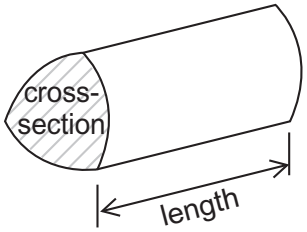
Advice
- In all calculations, show clearly how you work out your answer.

Formulae Sheet: Foundation Tier

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



Volume of prism = area of cross-section × length



Answer **all** questions in the spaces provided.

1 These are the favourite drinks of 20 people.

Tea	Milk	Orange	Milk	Orange
Milk	Orange	Coffee	Orange	Tea
Coffee	Milk	Orange	Tea	Orange
Orange	Tea	Milk	Orange	Coffee

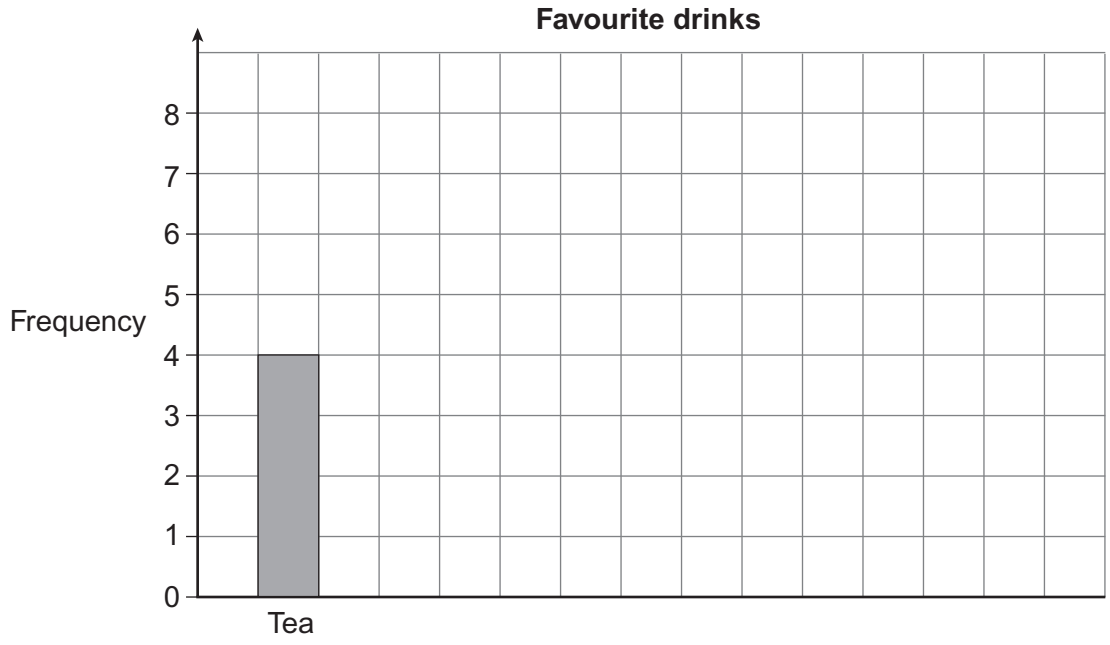
1 (a) Complete the table to show the results.

[2 marks]

Drink	Tally	Frequency
Tea	||||	4
Milk	𝍸	
Coffee		
Orange		
	Total	20

***1 (b)** Complete the bar chart to show the results.

[2 marks]



4

2 (a) Work out the sum of the multiples of 9 between 30 and 60

[3 marks]

.....

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.....

.....

Answer .....

2 (b) Josh writes down the whole numbers from 1 to 100

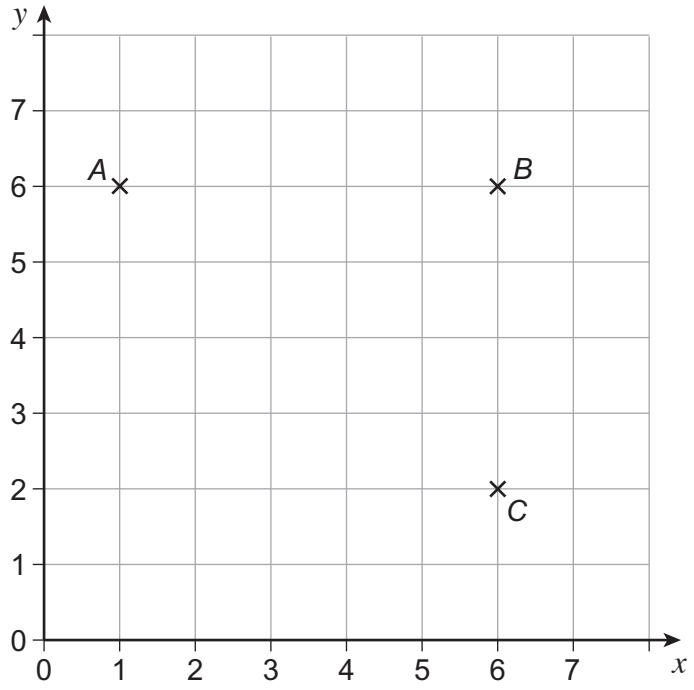
How many times does he write the digit 9?
Some of the numbers are shown to help you.

1 2 3 . . . . . 98 99 100

[2 marks]

Answer .....

3 *A*, *B* and *C* are plotted on a centimetre grid.



3 (a) *ABCD* is a rectangle.

Plot the point *D* on the grid.

[1 mark]

3 (b) Work out the area of *ABCD*.
State the units of your answer.

[2 marks]

.....

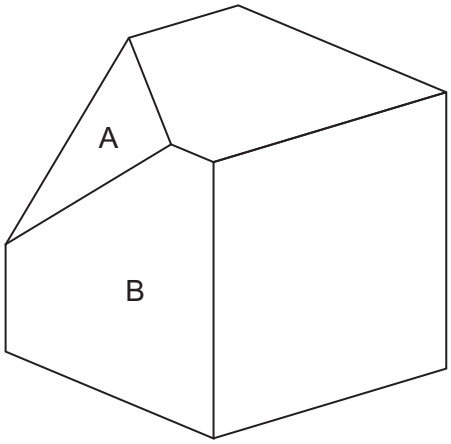
.....

Answer .....

8

Turn over ▶

4 A cube has one corner cut off as shown.



4 (a) What shape is face A?
Circle your answer.

[1 mark]

hexagon octagon pentagon triangle

4 (b) What shape is face B?
Circle your answer.

[1 mark]

hexagon pentagon rhombus trapezium

4 (c) Face C is opposite face B.

What shape is face C?

[1 mark]

Answer .....

5 For each statement choose one of the following to make it correct.

greater than less than equal to

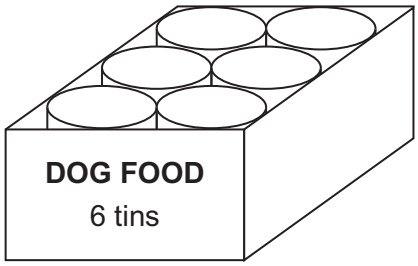
[2 marks]

2.37 is 2.73

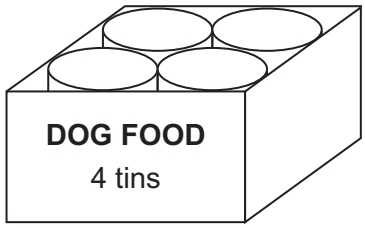
0.65 is ..... $\frac{6}{10}$

42% is 0.42

***6** Dog food comes in boxes of 6 tins or 4 tins.



£3.00



£1.80

Which box is better value?
You **must** show your working.

[3 marks]

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.....

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Answer .....

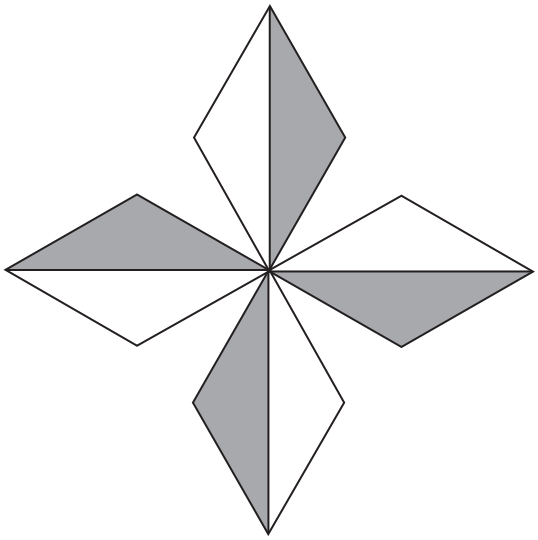
8

7 This diagram has been shaded so that it has

no lines of symmetry

and

rotational symmetry of order 4



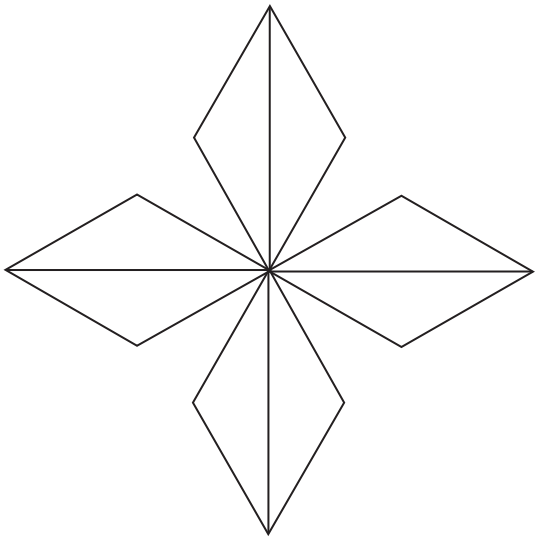
7 (a) Shade parts of this diagram so that it has

two lines of symmetry

and

rotational symmetry of order 2

[1 mark]



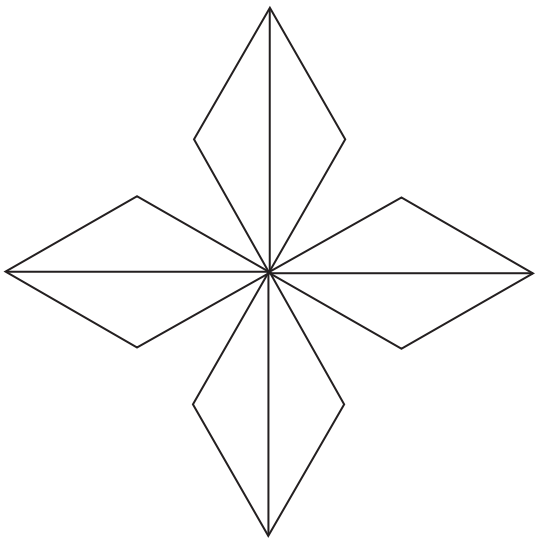
7 (b) Shade parts of this diagram so that it has

one line of symmetry

and

no rotational symmetry.

[1 mark]



8 A square has a perimeter of 20 cm

Work out its area.

[2 marks]

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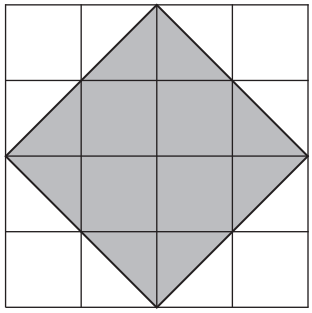
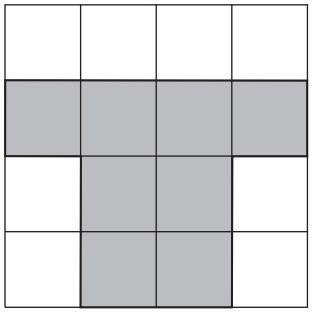
Answer ..... cm^2

4

9 Two shapes are drawn on centimetre grids.



A



B

Which statement is true?
Tick a box.
You **must** show your working.

[3 marks]

A has a **smaller** area than B. ☐

A has the **same** area as B. ☐

A has a **greater** area than B. ☐

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***10 (a)** The price of a jacket is £70
The price is to be reduced by 15%

How much will the price be reduced by?

[2 marks]

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Answer £ .....

10 (b) The price of a dress is £200
The price is to be reduced by £40

What percentage will the price be reduced by?

[2 marks]

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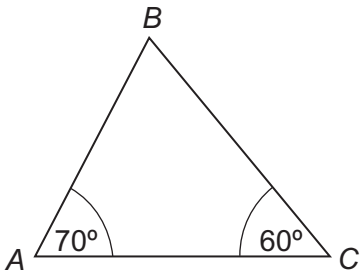
Answer ..... %

7

11 (a)



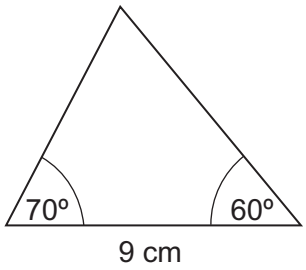
Not drawn accurately

What type of triangle is *ABC*?
Circle your answer.

[1 mark]

Equilateral Isosceles Right-angled Scalene

11 (b) You will need a ruler and a protractor to answer this question.



Not drawn accurately

Make an accurate drawing of this triangle.
The base has been drawn for you.

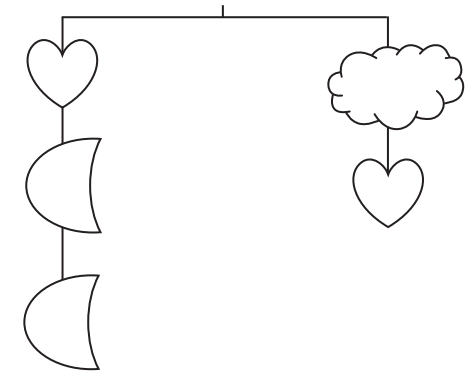
[2 marks]

3

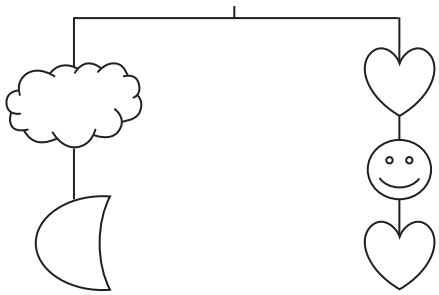
12 These objects are used to make cot mobiles.

Heart	Moon	Cloud	Face	Star
				
8 grams	10 grams	20 grams		

The total weight on each side of a cot mobile must be the same.
For example



12 (a) Here is a cot mobile.



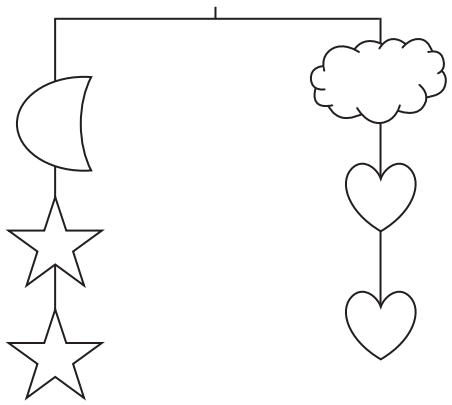
How much does a **face** weigh?

[2 marks]

.....

Answer ..... grams

12 (b) Here is another cot mobile.



How much does a **star** weigh?

[2 marks]

.....

.....

.....

Answer ..... grams

Turn over for the next question

4

13 Here is a formula to convert degrees Kelvin to degrees Celsius.

$$C = K - 273$$

13 (a) Work out C when $K = 240$

[1 mark]

.....

.....

Answer .....

13 (b) Work out K when $C = -272$

[1 mark]

.....

.....

Answer .....

13 (c) The formula that converts degrees Fahrenheit to degrees Celsius is

$$C = \frac{5}{9}(F - 32)$$

Which **one** of the following converts degrees Fahrenheit to degrees Kelvin?
Circle your answer.

[1 mark]

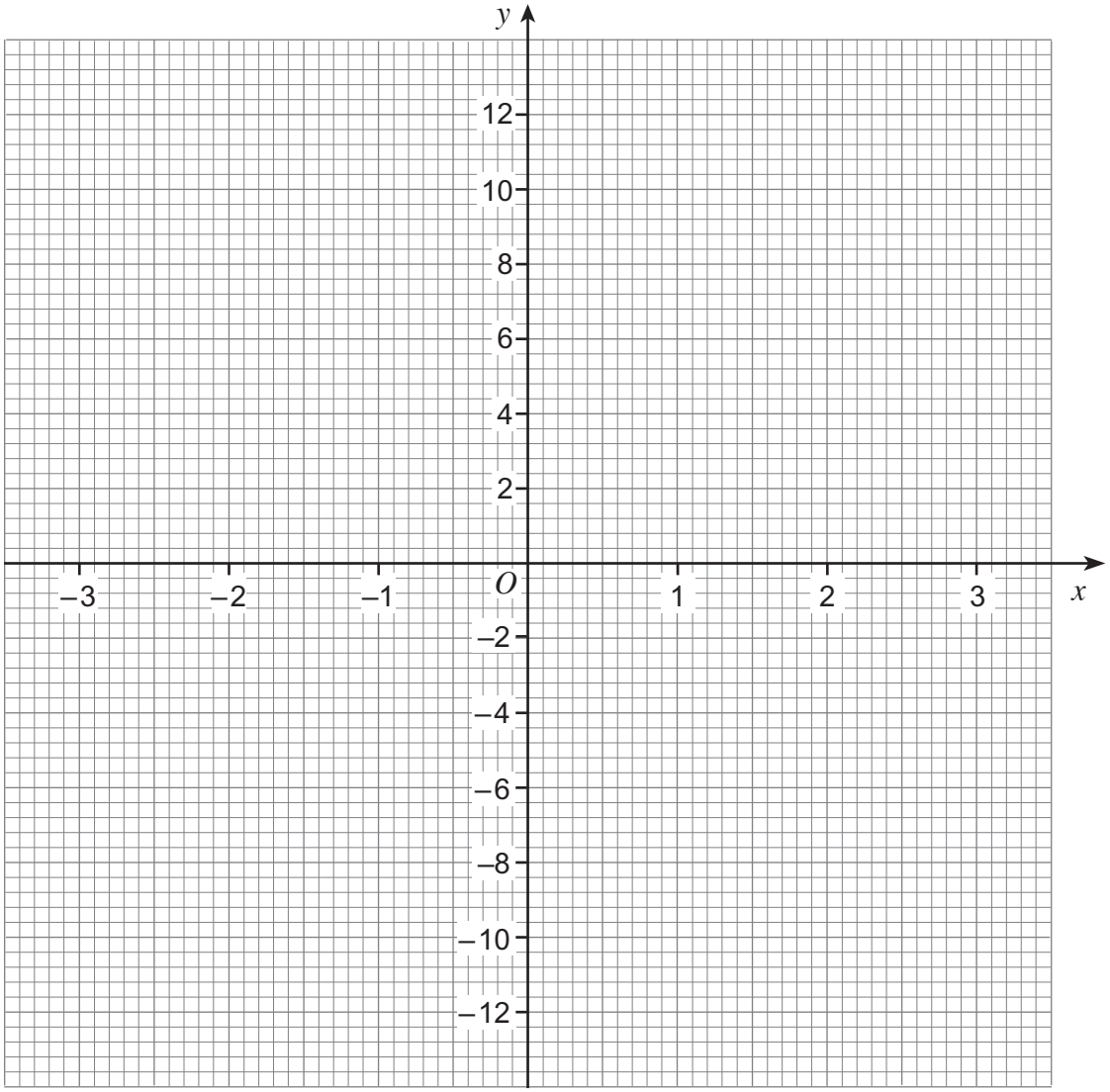
$K = \frac{5}{9}(F - 305)$ $K = \frac{5}{9}(F - 242)$

$K = \frac{5}{9}(F - 32) + 273$ $K = \frac{5}{9}(F - 32) - 273$

14 Complete the table and draw the graph of $y = 3x - 2$ for values of x from -3 to 3

[3 marks]

x	-3	0	3
y		-2	



6

15 (a) Which **one** of these is **not** a factor of $24xy$.
Circle your answer.

[1 mark]

3 $4y$ $10xy$ $12x$

15 (b) Work out the highest common factor (HCF) of 18 and 30

[2 marks]

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Answer .....

16 These instructions are on a bottle of lawn feed.

'Mix 200 millilitres of lawn feed with 10 litres of water.'

How many millilitres of lawn feed should be mixed with 3 gallons of water?
Use 1 gallon = 4.5 litres

[3 marks]

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Answer ..... millilitres

17 The table shows information about water used in a household.
The value for April is missing.

Month	Water used (m^3)
January	16.2
February	18.1
March	15.9
April	
May	17.8
June	21.0

The mean monthly water used for the six months is 18 m^3

Work out the value for April.

[3 marks]

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Answer ..... m^3

Turn over for the next question

9

18 (a) Simplify fully $3x + 4x - 2x$

[1 mark]

.....

.....

Answer .....

18 (b) Make w the subject of the formula $z = w + 3$

[1 mark]

.....

.....

Answer .....

18 (c) Factorise fully $4y^2 + 6y$

[2 marks]

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Answer .....

19 Use approximations to estimate the value of

$$\frac{21.6 \times 98}{34 + 18.6}$$

[3 marks]

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Answer .....

Turn over for the next question

7

20 The first buses to X and Y leave a bus station at 7 am

Buses to X leave every 25 minutes.

Buses to Y leave every 20 minutes.

When will the buses to X and Y next leave at the same time?

[3 marks]

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Answer .....

21 Six whole numbers have

a median of 10

a mode of 11

a range of 4

Work out a possible set of six numbers.
Write the numbers in order.

[3 marks]

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Answer ..... , ... , ... , ... , ... , ...

22 A fishing lake contains thousands of fish.
The fish are Carp, Bream or Roach.

10 fish are caught.
The table shows some of the results.

	Carp	Bream	Roach
Frequency	4		
Relative frequency		0.1	

22 (a) Complete the table.

[3 marks]

22 (b) The owner uses the results to estimate the proportion of Carp in the lake.

How can she make her estimate more reliable?

[1 mark]

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END OF QUESTIONS

10

There are no questions printed on this page

DO NOT WRITE ON THIS PAGE
ANSWER IN THE SPACES PROVIDED