OCR

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Wednesday 5 November 2014 – Morning

GCSE MATHEMATICS B

J567/01 Paper 1 (Foundation Tier)

Candidates answer on the Question Paper.

OCR supplied materials:
None

Other materials required:
- Geometrical instruments
- Tracing paper (optional)

Duration: 1 hour 30 minutes

* J 5 6 7 0 1 *

* 1 1 8 2 5 2 5 6 7 1 *

Candidate forename		Candidate surname	

Centre number						Candidate number				

INSTRUCTIONS TO CANDIDATES

- Write your name, centre number and candidate number in the boxes above. Please write clearly and in capital letters.
- Use black ink. HB pencil may be used for graphs and diagrams only.
- Answer **all** the questions.
- Read each question carefully. Make sure you know what you have to do before starting your answer.
- Your answers should be supported with appropriate working. Marks may be given for a correct method even if the answer is incorrect.
- Write your answer to each question in the space provided. Additional paper may be used if necessary but you must clearly show your candidate number, centre number and question number(s).
- Do **not** write in the bar codes.

INFORMATION FOR CANDIDATES

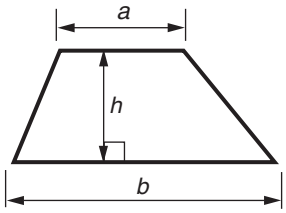
- The number of marks is given in brackets **[ ]** at the end of each question or part question.
- Your quality of written communication is assessed in questions marked with an asterisk (*).
- The total number of marks for this paper is **100**.
- This document consists of **24** pages. Any blank pages are indicated.

WARNING

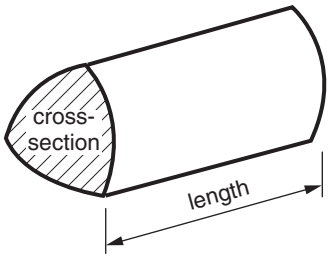
No calculator can be used for this paper

Formulae Sheet: Foundation Tier

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



Volume of prism = (area of cross-section) × length



PLEASE DO NOT WRITE ON THIS PAGE

Answer **all** the questions.

1 Work out.

(a) 642 + 318

(a) ..... **[1]**

(b) 856 – 361

(b) ..... **[1]**

(c) 8.43 + 7.2

(c) ..... **[1]**

(d) 5.32 × 1000

(d) ..... **[1]**

(e) 950.134 ÷ 100

(e) ..... **[1]**

(f) 15% of 900

(f) ..... **[2]**

2 Leonie asked some teenagers about their favourite way to spend Saturday.
The pictogram shows her results.

		Frequency
Shopping		20
Sport		18
Computer Game		
Meeting Friends		12
Internet		
Other		

Key:  represents 4 people

(a) 18 people answered Sport.

Show this on the pictogram. **[1]**

(b) How many people answered Internet?

(b) ..... **[1]**

(c) How many **more** people answered Computer Game than Other?

(c) ..... **[1]**

(d) How many people were asked altogether?

(d) ..... **[2]**

3 **(a)** Simplify.

$6p + 5q + 3p - 2q$

(a) ..... **[2]**

(b) Solve.

(i) $5a = 15$

(b)(i) $a =$ ..... **[1]**

(ii) $8b - 6 = 26$

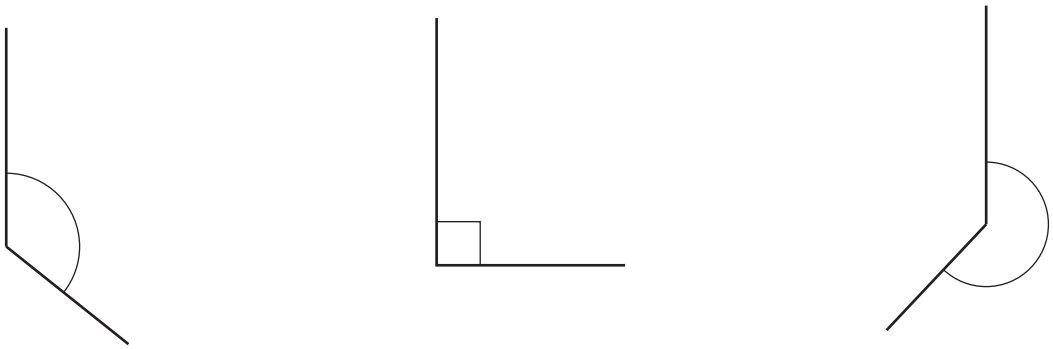
(ii) $b =$ ..... **[2]**

(iii) $\frac{x}{3} + 25 = 29$

(iii) $x =$ ..... **[2]**

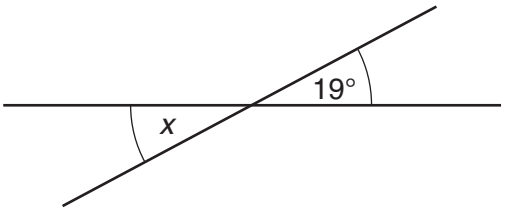
4 **(a)** Three angles are drawn below.

Write down the mathematical name of each type of angle.



.... **[3]**

(b) Complete the sentence below.

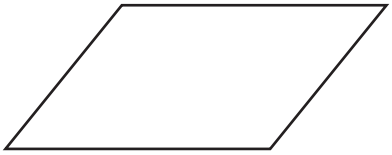


Not to scale

Angle *x* is .....° because .....

..... **[2]**

5 **(a)** Write down the mathematical name of this quadrilateral.



(a) ..... **[1]**

(b) Draw the lines of symmetry on this rectangle.

[2]

6 Here is a list of numbers.

11 8 11 14 11 15 13 14

(a) Find the mode.

(a) ..... **[1]**

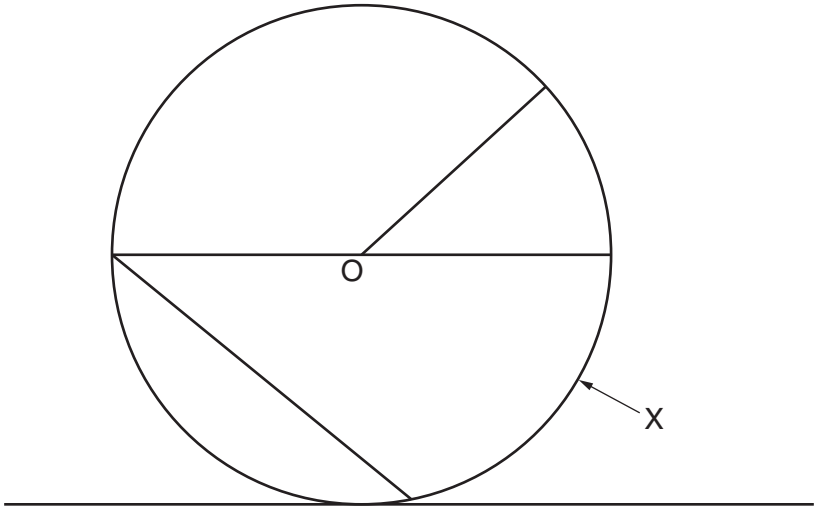
(b) Find the range.

(b) ..... **[1]**

(c) Find the median.

(c) ..... **[2]**

7 Here is a circle, centre O.



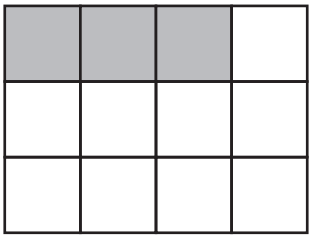
(a) Measure, in centimetres, the diameter of the circle.

(a) ..... cm **[2]**

(b) Write down the mathematical name of the part of the circle labelled X.

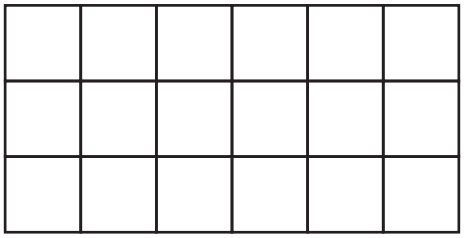
(b) ..... **[1]**

8 **(a)** What fraction of this shape is shaded?



(a) ..... **[1]**

(b) Shade $\frac{2}{3}$ of the rectangle below.



[2]

9 Choose a word from this list to complete each of the sentences below.

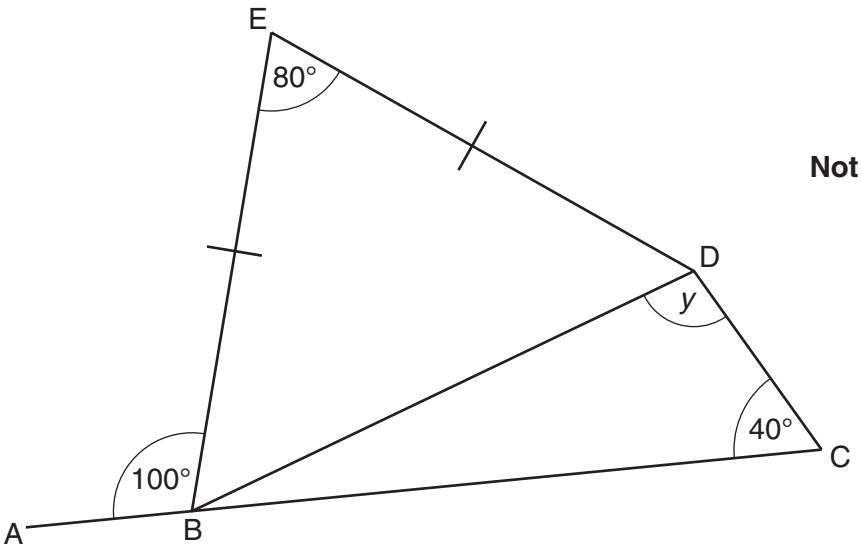
likely	certain	evens
impossible	unlikely	

(a) If today is Saturday, it is ..... that tomorrow is Sunday. **[1]**

(b) Pierre throws a fair coin. It is ..... that it lands on heads. **[1]**

10 In the diagram ABC is a straight line.
BE = ED.

Work out angle *y*.
Show all your working.



Not to scale

y = ... ° **[4]**

11 **(a)** Mikhail travelled from Manchester to Moscow.

(i) He left home at 0820 to travel to the airport.
He arrived at the airport at 0915.

How long did his journey take?

(a)(i) ..... minutes **[1]**

(ii) Mikhail's flight left at 1305.

How long did Mikhail have to wait at the airport?

(ii) ..... hours ..... minutes **[2]**

(iii) When Mikhail left Manchester the temperature was 6°C.
When Mikhail arrived in Moscow the temperature was 8° colder.

What was the temperature in Moscow?

(iii) ..... °C **[1]**

(b) Katy travelled from Manchester to the USA.
There were 587 passengers on the plane.
Each passenger paid £827.

Estimate the amount paid by the passengers in total.

(b) £ ..... **[2]**

12 Robert is having a barbecue.

(a) (i) He uses this formula to work out how many burgers to buy.

multiply the number of people by 2 and add 15

How many burgers should Robert buy for 30 people?

(a)(i) ..... **[2]**

(ii) Robert has a joint of pork weighing 6 kg.
He uses this formula to work out for how long he should cook the pork.

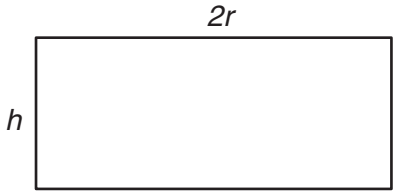
$$T = 40w + 25$$

T = time in minutes w = weight in kg

For how long should Robert cook the pork?

(ii) ..... minutes **[2]**

(b) The grill of Robert's barbecue is a rectangle.

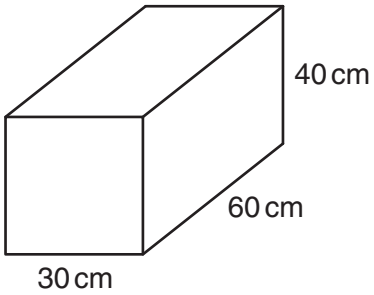


Not to scale

Write a formula for the perimeter, P, of the grill.

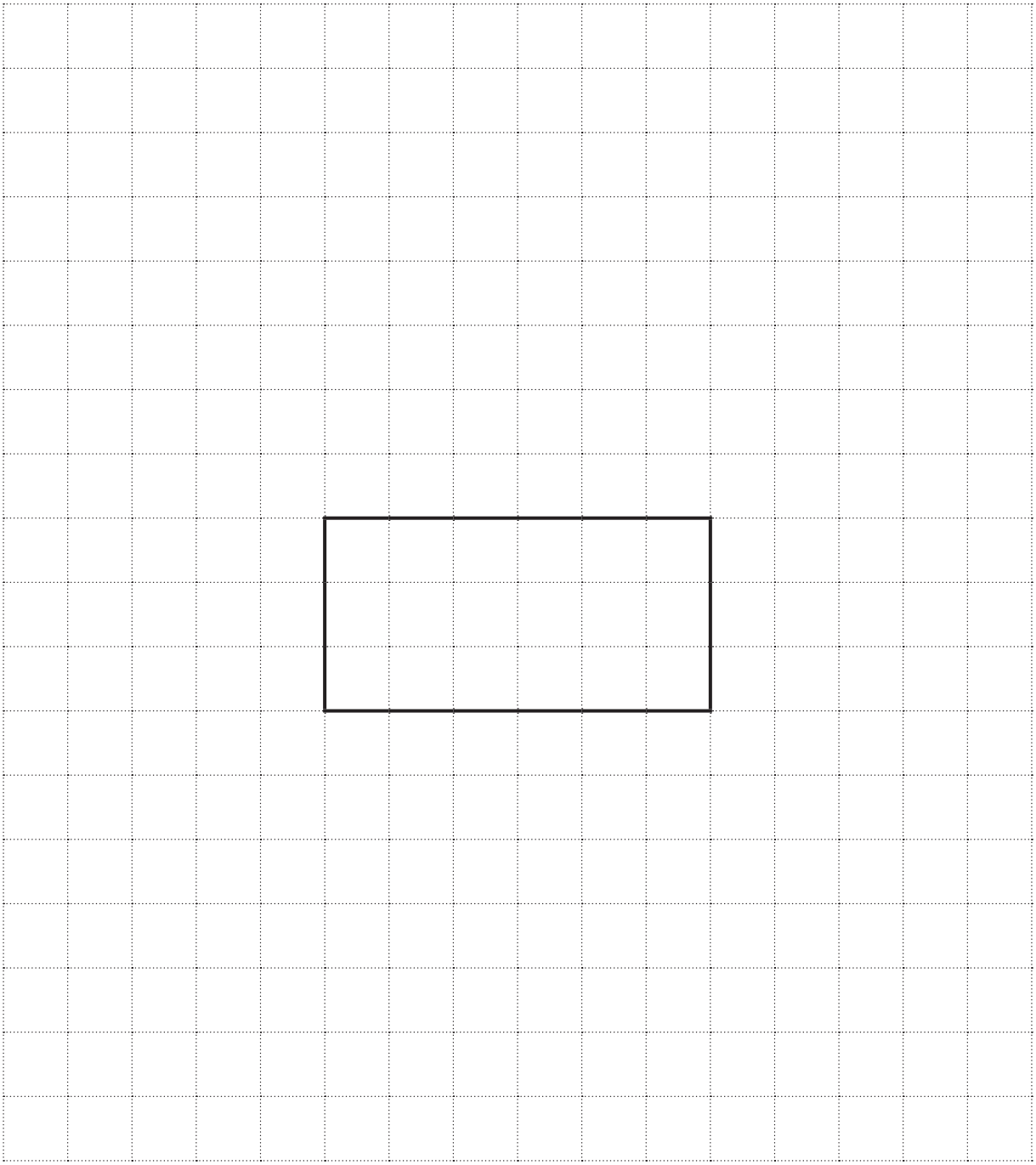
(b) ..... **[2]**

13 Jennie has a box which is a cuboid.
The box has a lid.



(a) On the grid below make a drawing of a net of the box.
One face has been drawn for you.

Scale: 1 cm represents 10 cm.



[3]

(b) Jennie needs her box to hold 75000 cm^3.

Is her box big enough?
Explain how you decide.

.....

.....

..... **[3]**

14 Riva Kennels charge £9 per day for each dog.

(a) The cost is reduced to £8.50 if the owners take food for their dogs.
There is a 10% discount off the total bill for 2 or more dogs.

Ruth books her 2 dogs into the kennels for 16 days and takes their food.

How much does she pay altogether?

(a) £ ..... **[5]**

(b) Ruth's 2 dogs each eat $\frac{3}{5}$ of a tin of dog food each day.

What is the least number of tins that Ruth needs to take for 16 days?

(b) ..... **[4]**

(c) The dogs are taken for a 3 km walk.

How far is this in metres?

(c) ..... m **[1]**

15 **(a)** Write down the reciprocal of 5.

(a) ..... **[1]**

(b) Write 450 as a product of its prime factors.

(b) ..... **[2]**

16 **(a)** Here are the first four terms of a sequence.

3 9 15 21

(i) Write down the next term of the sequence.

(a)(i) ..... **[1]**

(ii) Explain how you worked out your answer.

..... **[1]**

(b) The expression for the nth term for a different sequence is $5n + 2$.

Write down the first three terms of this sequence.

(b) .... **[2]**

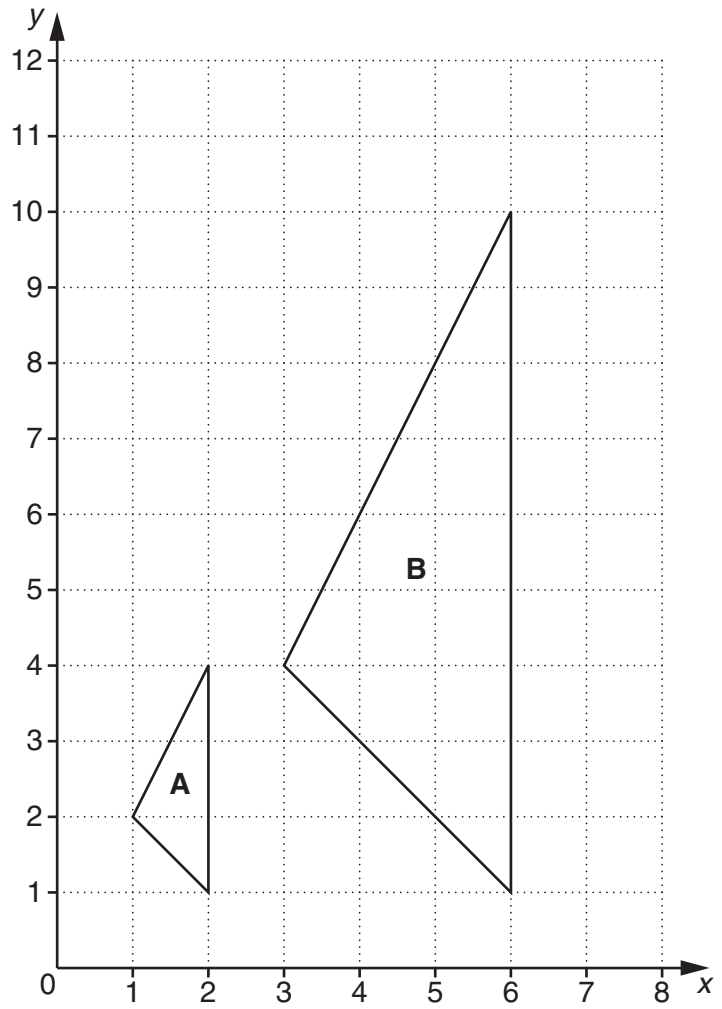
(c) Here are the first four terms of another sequence.

2 5 8 11

Write down an expression for the nth term.

(c) ..... **[2]**

17 **(a)** The graph shows two triangles, **A** and **B**.
Triangle **B** is an enlargement of triangle **A**.



(i) Mark the centre of enlargement on the diagram and write down its coordinates.

(a)(i) (..... , ...) **[2]**

(ii) Write down the scale factor of the enlargement.

(ii) ..... **[1]**

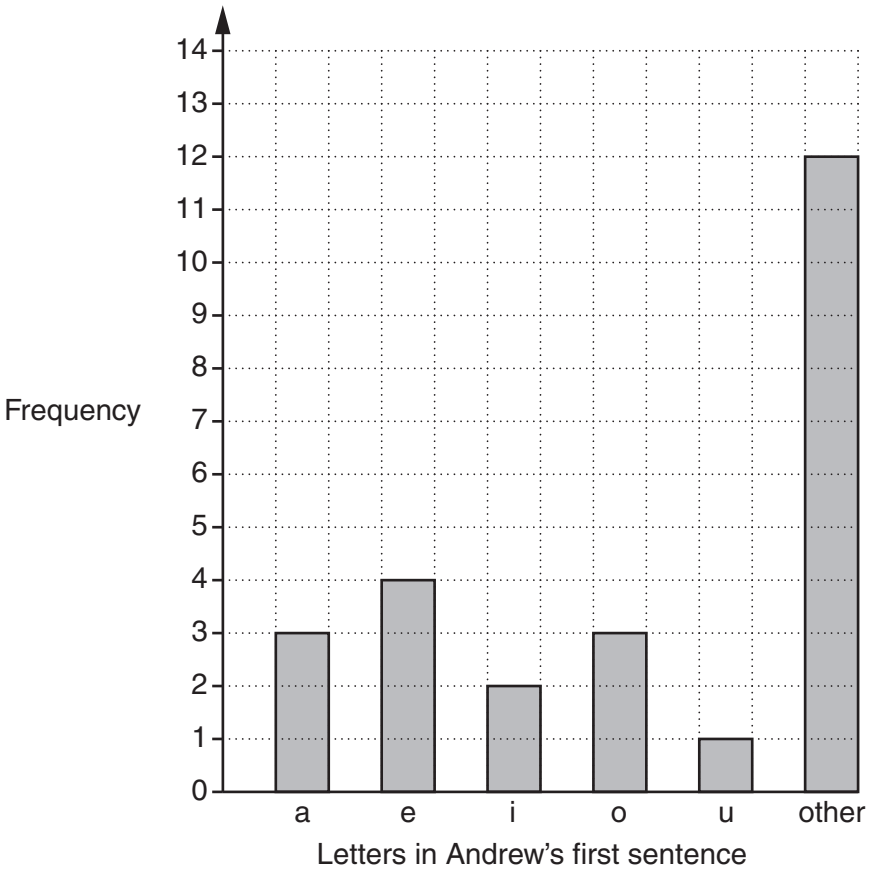
(b) Another shape, **P**, has a perimeter of 20 cm and is enlarged by a scale factor of 5 to form shape **Q**.

Write down the perimeter of shape **Q**.

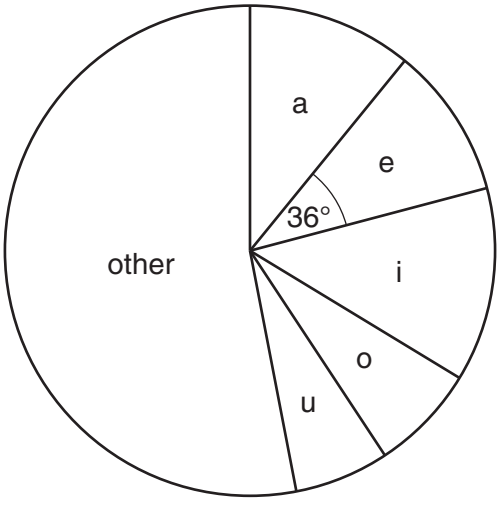
(b) ..... cm **[1]**

18 Andrew and Lucy want to find the most common vowel in their books.
They record how often each letter appears in the first sentence.

The results from the first sentence in Andrew's book are shown in the bar chart.



The results from the first sentence in Lucy's book are shown in the pie chart.



Letters in Lucy's first sentence

(a) Use these results to decide whose sentence contains the higher proportion of the letter e. Show how you decide. **[4]**

(b) Andrew says

"e is the most common vowel in my book".

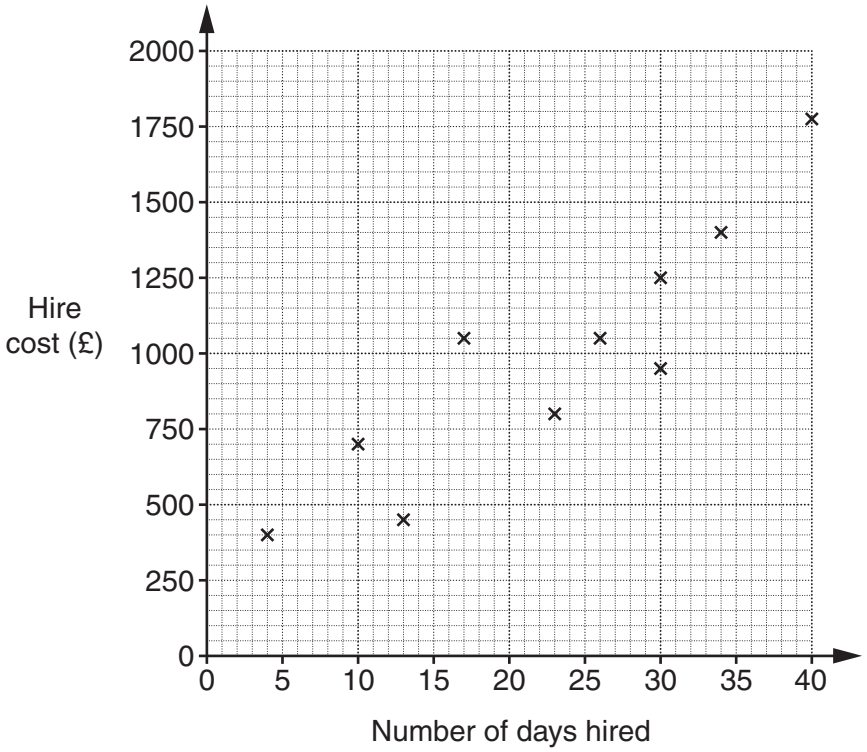
Explain why he might be wrong.

.....

..... **[1]**

19 Eddie records the cost of hiring a lorry from different companies.

Number of days hired	10	26	17	30	4	40	23	13	34	30	15	37
Hire cost (£)	705	1054	1049	1251	402	1772	801	448	1403	950	750	1500



(a) Complete the scatter diagram. The first ten points have already been plotted. **[1]**

(b) State the type of correlation shown in the scatter diagram.

(b) ..... **[1]**

(c) Draw a line of best fit on the diagram. **[1]**

(d) The total cost is the hire cost added to the fuel cost.

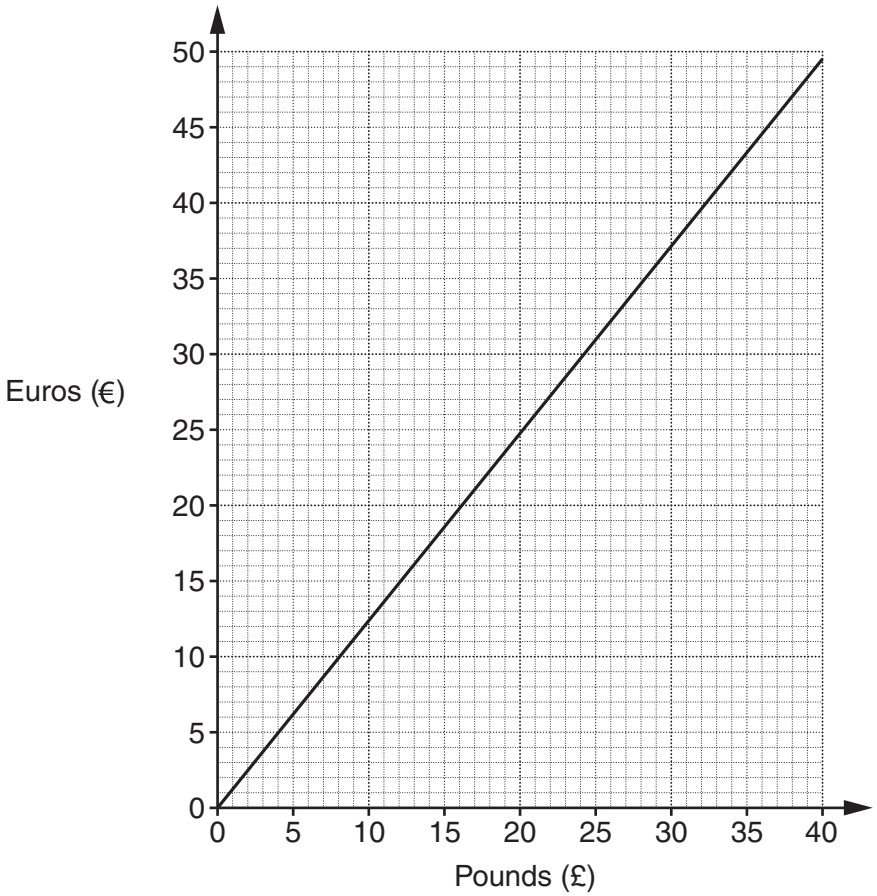
Eddie estimates the cost of fuel to be 50p per mile.
He needs a lorry for 20 days and will travel 2400 miles.

Estimate the total cost.
Show your working clearly.

(d) £ ..... **[3]**

TURN OVER FOR QUESTION 20

20* This conversion graph can be used to change between prices in pounds (£) and prices in euros (€).



Phoebe can buy a watch from France for €40 plus 5% for delivery.

She can buy the same watch in the UK for £30 plus $\frac{1}{6}$ of this price for delivery.

Work out which is cheaper.

..... **[5]**

END OF QUESTION PAPER