

OXFORD CAMBRIDGE AND RSA EXAMINATIONS
GCSE

A502/01

MATHEMATICS A

Unit B (Foundation Tier)

TUESDAY 15 JANUARY 2013: Afternoon

DURATION: 1 hour

plus your additional time allowance

MODIFIED ENLARGED 18pt

Candidate forename		Candidate surname	
-------------------------------	--	------------------------------	--

Centre number						Candidate number				
--------------------------	--	--	--	--	--	-----------------------------	--	--	--	--

Candidates answer on the Question Paper.

OCR SUPPLIED MATERIALS:

None

OTHER MATERIALS REQUIRED:

Geometrical instruments

Tracing paper (optional)

<p><u>WARNING</u> No calculator can be used for this paper</p>
--

READ INSTRUCTIONS OVERLEAF

INSTRUCTIONS TO CANDIDATES

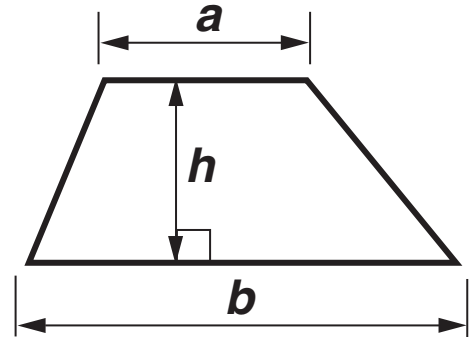
- Write your name, centre number and candidate number in the boxes on the first page. Please write clearly and in capital letters.
- Use black ink. HB pencil may be used for graphs and diagrams only.
- Answer ALL the questions.
- Read each question carefully. Make sure you know what you have to do before 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).

INFORMATION FOR CANDIDATES

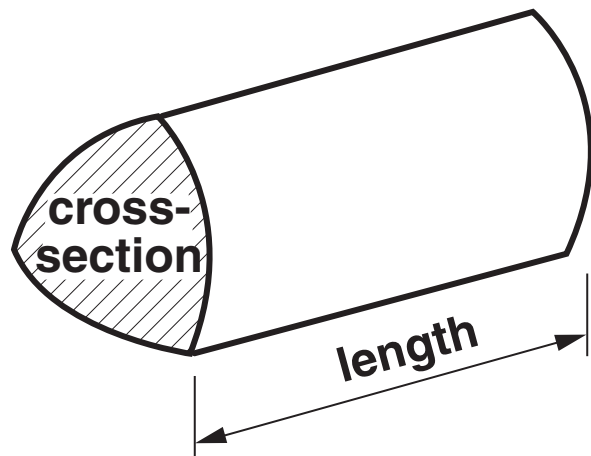
- The number of marks is given in brackets [] at the end of each question or part question.
- Your Quality of Written Communication is assessed in questions marked with an asterisk (*).
- The total number of marks for this paper is 60.

FORMULAE SHEET: FOUNDATION TIER

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



Volume of prism = (area of cross-section) \times length



1 (a) Work out.

$$23 + 38$$

(a) _____ [1]

(b) (i) Work out.

$$8 \times 6$$

(b)(i) _____ [1]

(ii) Work out.

$$480 \div 6$$

Your answer to part (b)(i) may help you.

(ii) _____ [1]

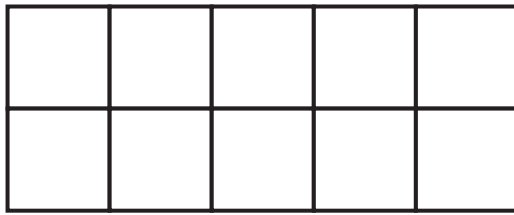
(c) A farmer fills egg boxes with eggs.

- **He fills 5 boxes, each with 4 eggs.**
- **He fills 7 boxes, each with 6 eggs.**
- **He fills 3 boxes, each with 10 eggs.**

Work out the total number of eggs.

(c) _____ [4]

- 2 (a) (i) Shade $\frac{1}{5}$ of this grid.



[1]

- (ii) Work out.

$$\frac{1}{5} + \frac{2}{5}$$

Give your answer as a fraction.

(a)(ii) _____ [1]

- (b) Write 14 days as a fraction of 30 days.
Give your answer as a fraction in its simplest form.

(b) _____ [2]

(c) Giles wins £100.

He gives $\frac{3}{4}$ of this money to charity.

Work out how much Giles gives to charity.

(c) £ _____ [2]

- 3 (a) Complete the statements below using words from this list.

square

cube root

cube

square root

(i) The _____ of 16 is 4. [1]

(ii) The _____ of 3 is 27. [1]

(b) Write down the value of the following.

(i) 2^3

(b)(i) _____ [1]

(ii) $\sqrt{169}$

(ii) _____ [1]

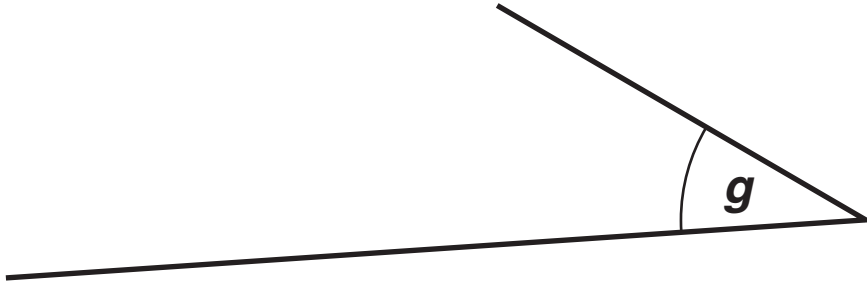
- 4 (a) Write the correct mathematical name under each of the three shapes below.
Choose from this list.

Square	Rectangle	Rhombus
Trapezium	Parallelogram	Kite



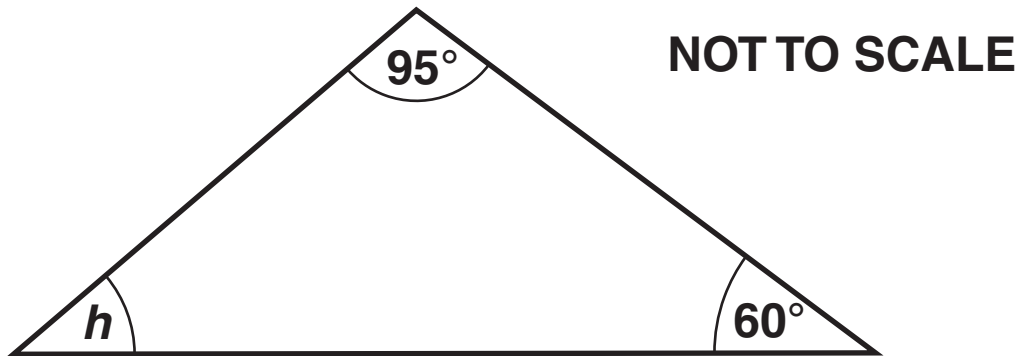
[3]

(b) What type of angle is angle g ?



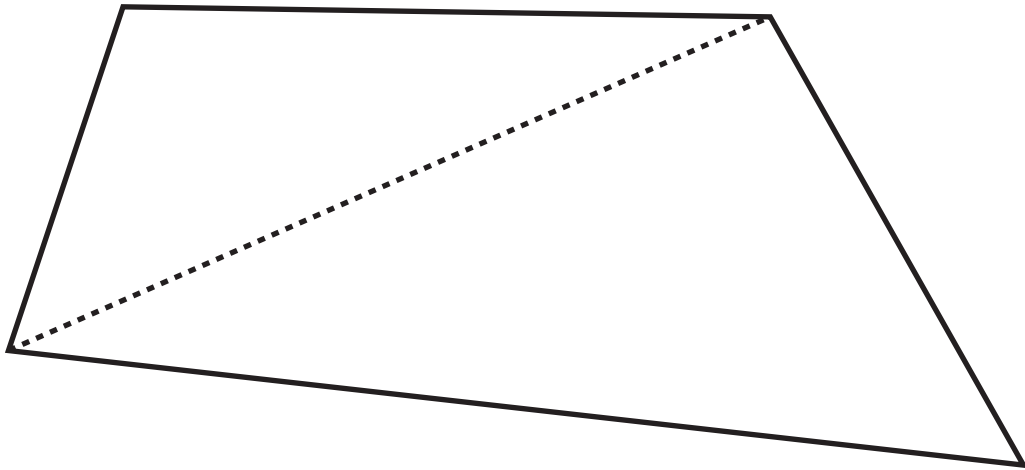
(b) _____ [1]

(c) Work out angle h .



(c) _____ [2]

(d)*The diagram shows a quadrilateral with one diagonal drawn.



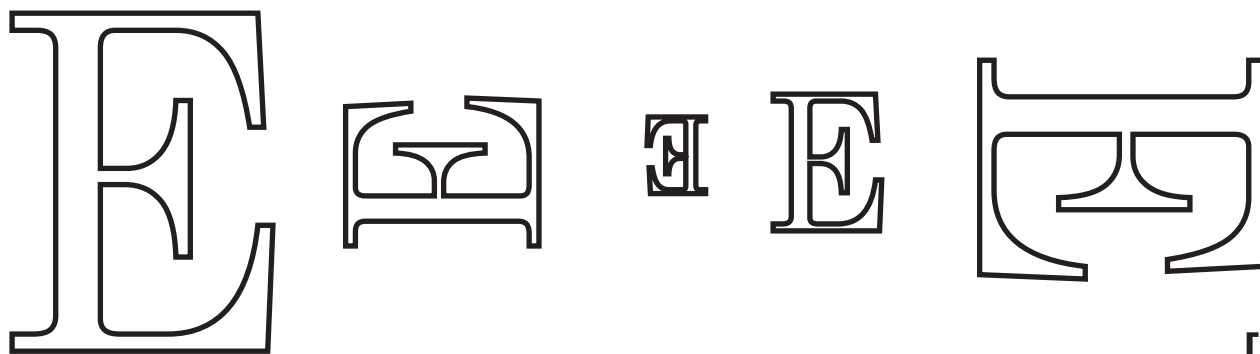
Without measuring, explain why the angles of a quadrilateral add up to 360° .

[3]

5 (a) This letter E is used in the title of a book.



Draw a ring around the letter that is congruent to the E drawn above.



[1]

(b) This letter G is also used in the book title.



Draw a ring around each of the two letters that are SIMILAR to the G drawn above.



[2]

- 6 (a) Information on the fat content for certain weights of beefburgers and salad dressing is given below.

Salad dressing: 120 g
Contains 25% fat

Beefburger: 200 g
Contains 10% fat

Work out how many grams of fat there are in

(i) the beefburger,

(a)(i) _____ g [1]

(ii) the salad dressing.

(ii) _____ g [2]

(b) A beefburger contains 87.13 g of protein.

Write 87.13 correct to the nearest whole number.

(b) _____ [1]

- 7 Brody records the value of £1 in euros (€) each Monday for six weeks.
His results are shown in the time series graph on the opposite page.**

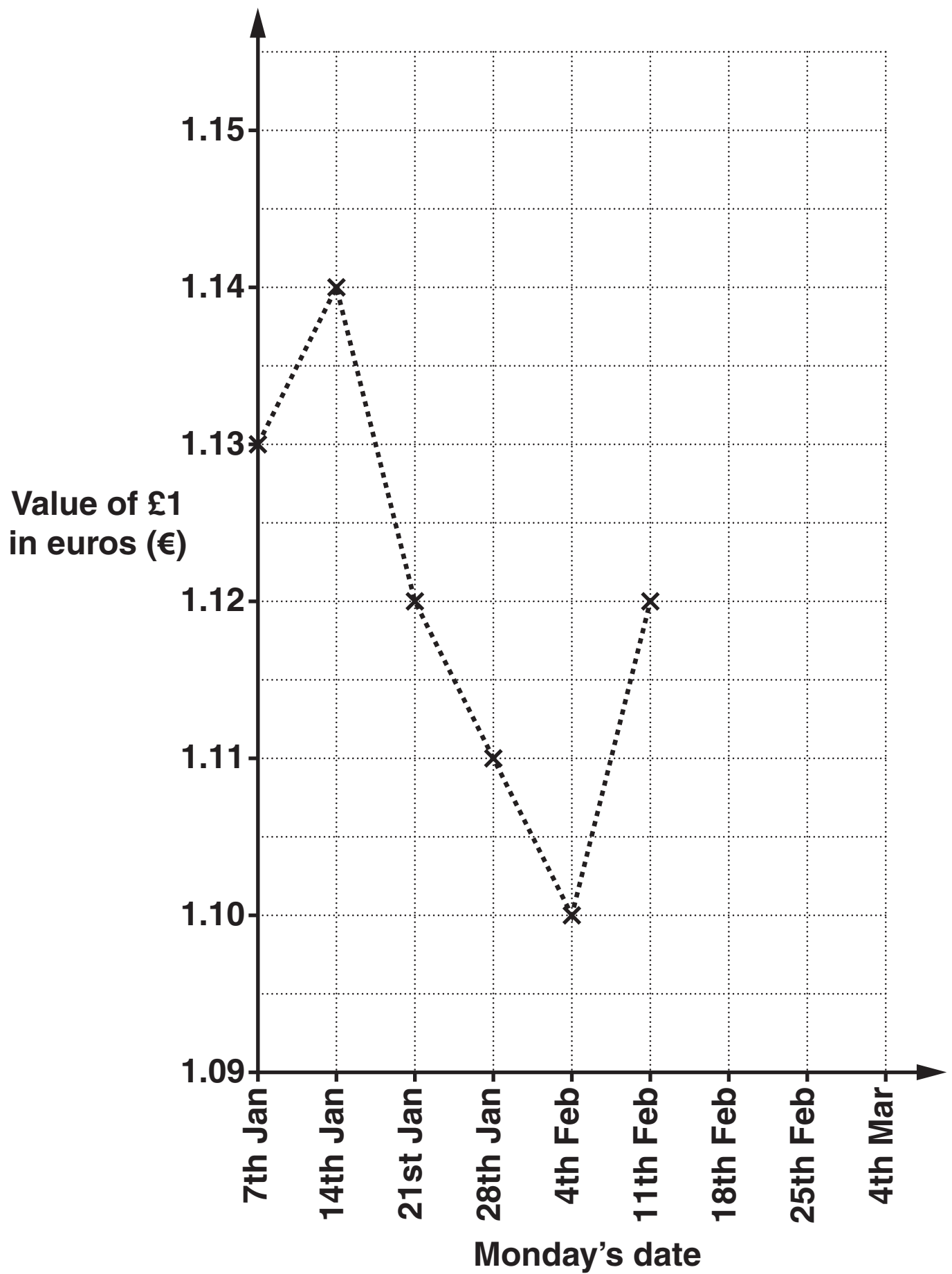
- (a) Complete Brody's graph using these values for the next three Mondays.**

Monday's date	18th Feb	25th Feb	4th Mar
Value of £1 in euros (€)	1.13	1.15	1.14

[2]

- (b) On which of these dates was the value of £1 in euros the greatest?**

(b) _____ [1]

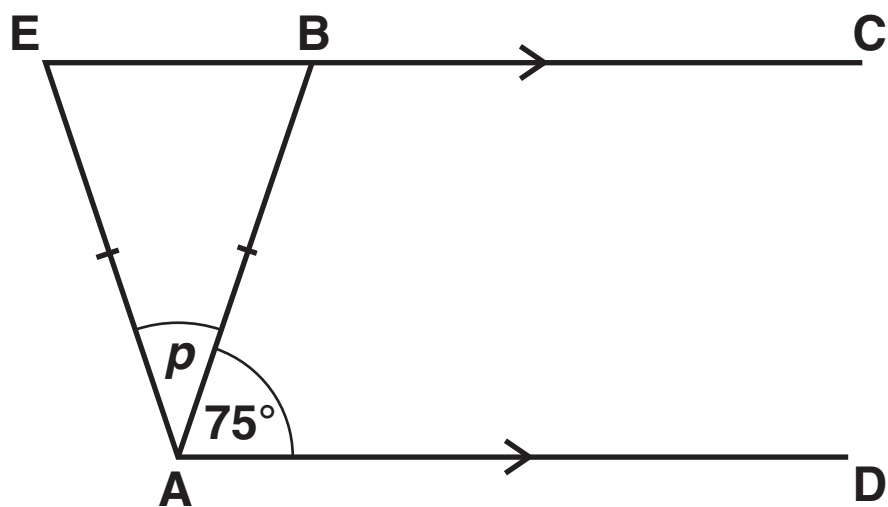


**(c)* On 28th Jan, Brody saw a phone for sale,
advertised at £100 or €120.**

**Is it cheaper for him to pay for the phone in
pounds (£) or euros (€)?
How much cheaper is it?**

[4]

- 8 In the diagram below, EBC is parallel to AD.
Triangle ABE is isosceles with $AE = AB$.
Angle BAD is 75° .

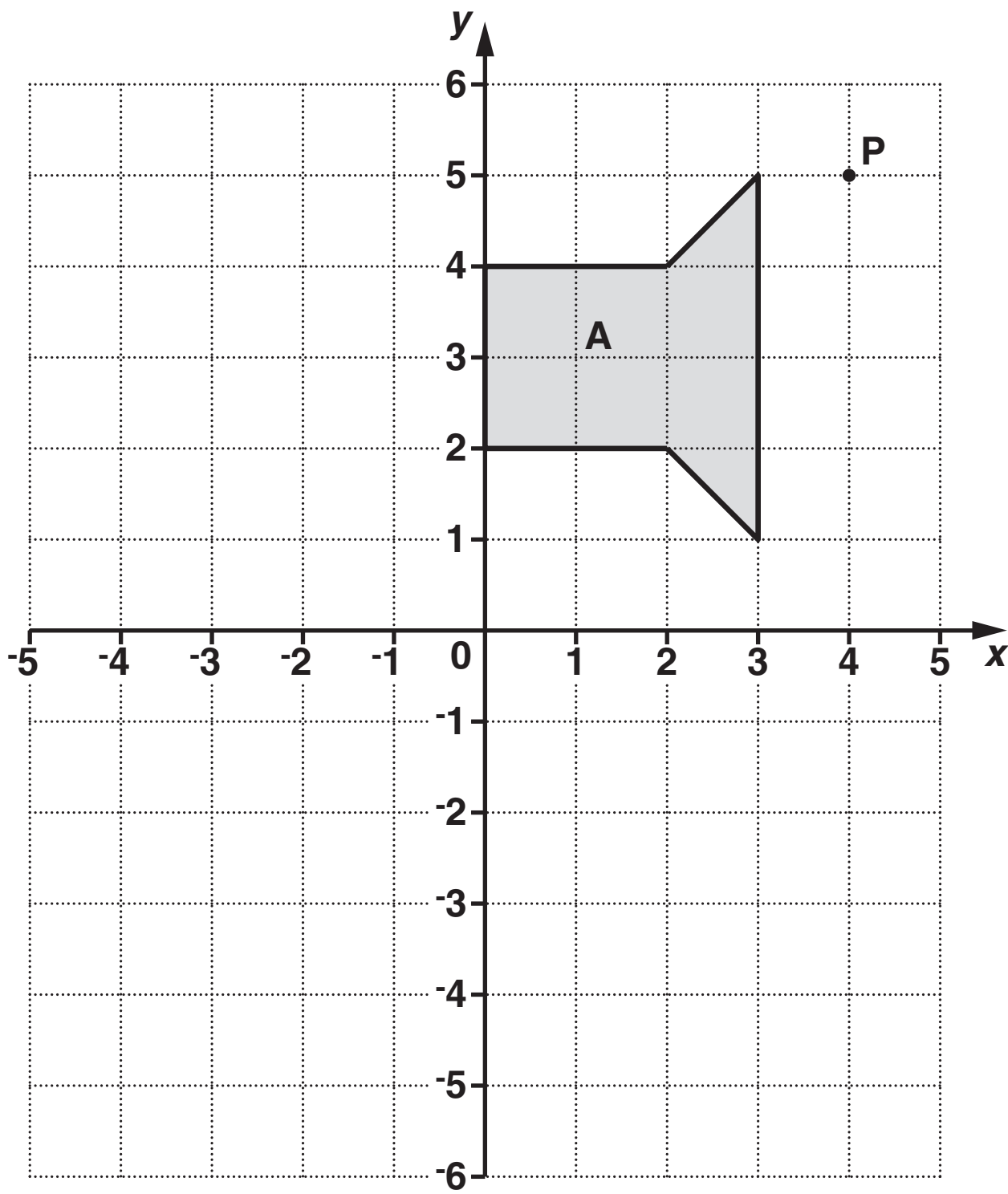


NOT TO SCALE

Work out the size of angle p .

_____ $^\circ$ [3]

9 The grid below shows point P and shape A.



(a) Write down the coordinates of point P.

(a) (_____ , _____) [1]

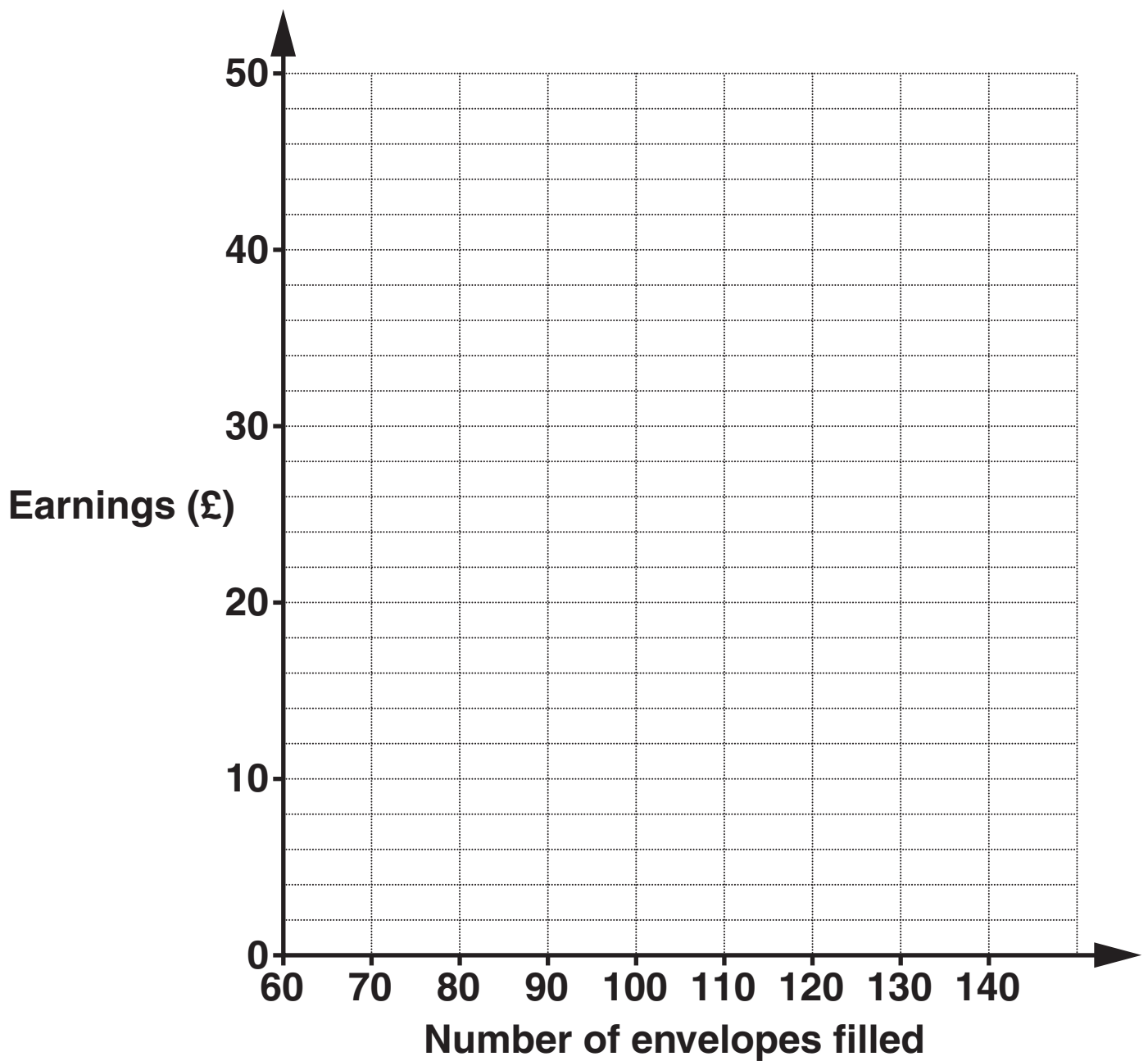
(b) Draw the reflection of shape A in the y -axis. [2]

- 10 (a) Lizzie has a part-time job putting leaflets into envelopes.
 She earns £30 a day for filling UP TO 90 envelopes.
 She earns 20p for every EXTRA envelope she fills after 90.

- (i) Complete this table showing how much she can earn.

Number of envelopes filled	60	70	80	90	100	110	120	130	140
Earnings (£)		30		30				38	

[2]



- (ii) Plot the pairs of values on the grid and join them using straight lines. [2]

**(b) Alec also has a job filling envelopes.
He earns 30p for EVERY envelope he fills.**

- (i) On the grid draw the straight line graph to
show Alec's earnings for filling from 60 to
140 envelopes.**

Label this line A.

[2]

- (ii) One day Alec and Lizzie find they have both
earned the same amount of money and filled
the same number of envelopes.**

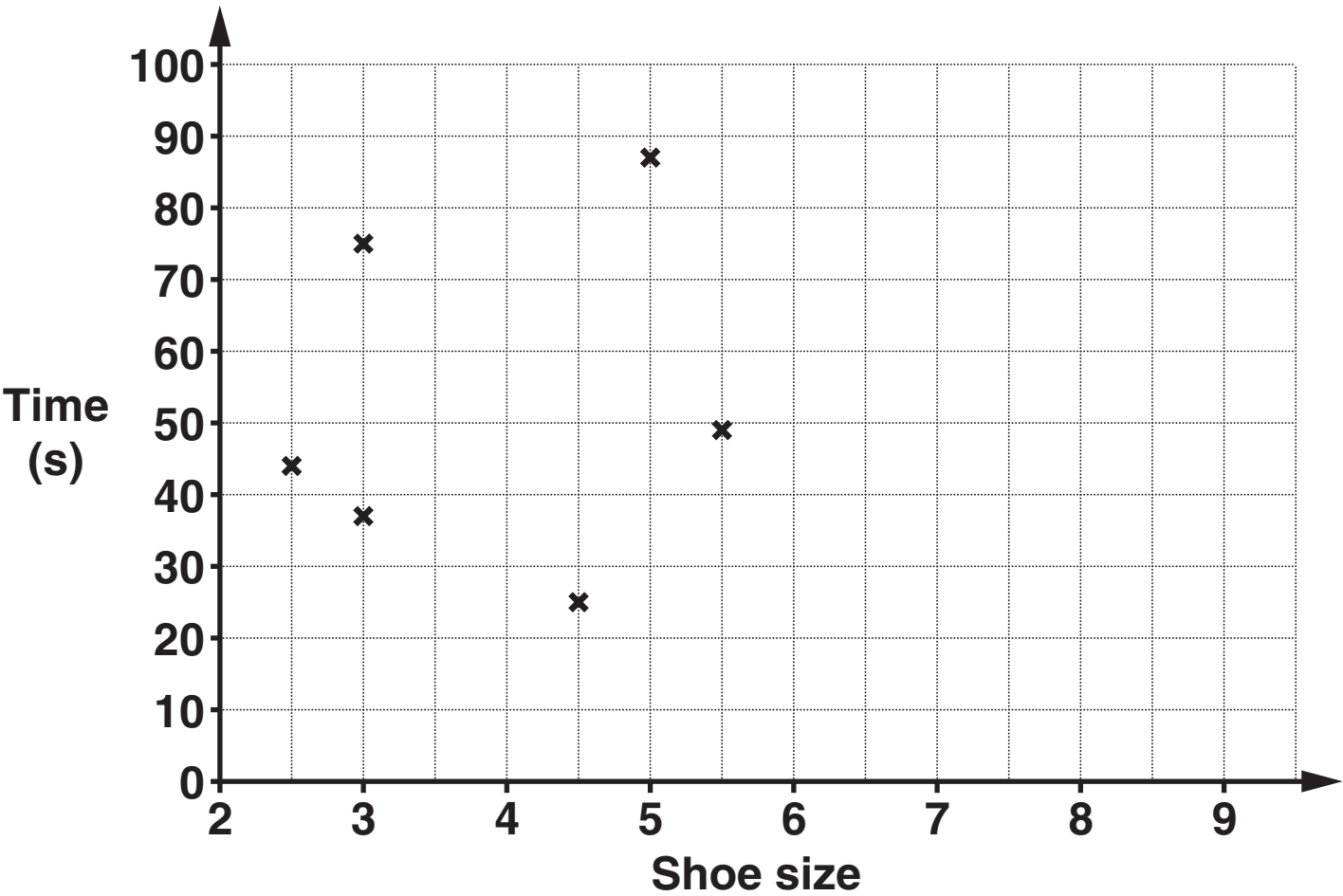
How many envelopes did they each fill?

(b)(ii) _____ [1]

BLANK PAGE

11 Rajneev records data for ten students in her school. She records their shoe size and the time it takes them to complete a puzzle.

Shoe size	2½	3	3	4½	5	5½	6	6	7½	9
Time (s)	44	37	75	25	87	49	34	62	31	43



The first 6 points are plotted on the scatter diagram.

(a) Complete the scatter diagram. [2]

(b) Choose from the following to describe the diagram.

Put a ring around your answer.

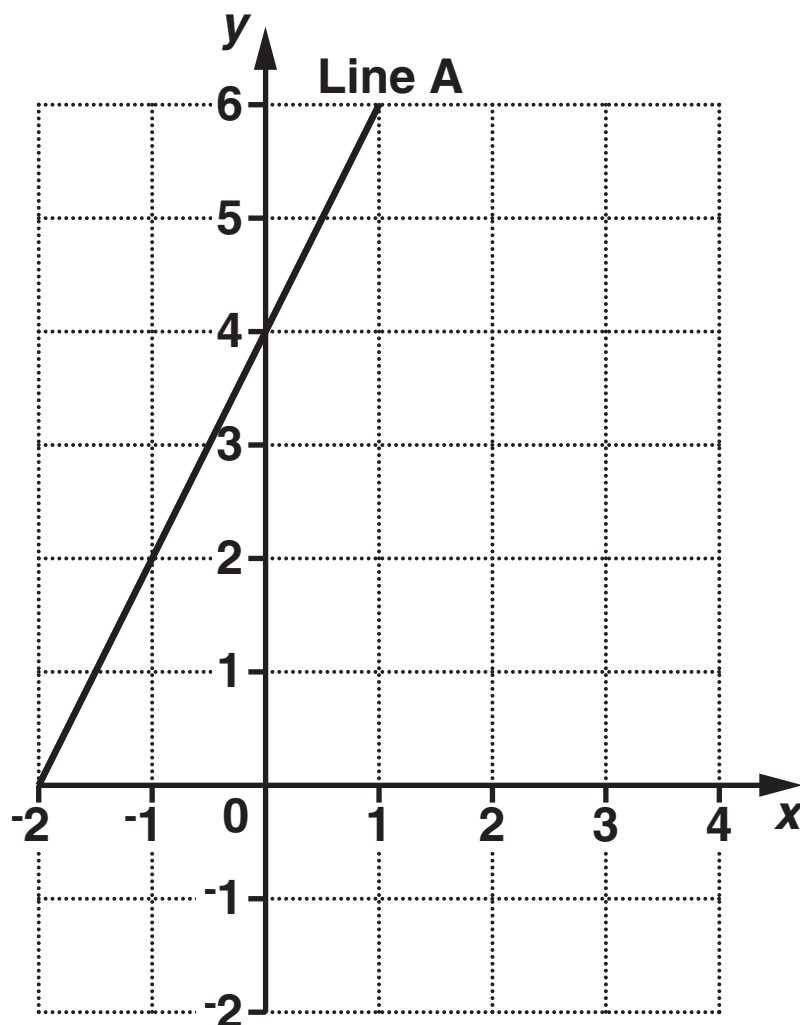
**Negative
correlation**

**No
correlation**

**Positive
correlation**

[1]

12 Line A is drawn on the grid below.



(a) Write down the coordinates of the point where line A crosses the y-axis.

(a) (_____ , _____) [1]

(b) The equation of line A is $y = 2x + 4$.

Write down the gradient of line A.

(b) _____ [1]

- (c) Write down the equation of the line that is parallel to line A and that passes through the point (0, 1).

(c) _____ [2]

END OF QUESTION PAPER

Copyright Information

OCR is committed to seeking permission to reproduce all third-party content that it uses in its assessment materials. OCR has attempted to identify and contact all copyright holders whose work is used in this paper. To avoid the issue of disclosure of answer-related information to candidates, all copyright acknowledgements are reproduced in the OCR Copyright Acknowledgements Booklet. This is produced for each series of examinations and is freely available to download from our public website (www.ocr.org.uk) after the live examination series.

If OCR has unwittingly failed to correctly acknowledge or clear any third-party content in this assessment material, OCR will be happy to correct its mistake at the earliest possible opportunity.

For queries or further information please contact the Copyright Team, First Floor, 9 Hills Road, Cambridge CB2 1GE.

OCR is part of the Cambridge Assessment Group; Cambridge Assessment is the brand name of University of Cambridge Local Examinations Syndicate (UCLES), which is itself a department of the University of Cambridge.

