

**Tuesday 15 January 2013 – Afternoon**

**GCSE MATHEMATICS A**

**A502/01** Unit B (Foundation Tier)

Candidates answer on the Question Paper.

**OCR supplied materials:**  
None

**Other materials required:**

- Geometrical instruments
- Tracing paper (optional)

**Duration: 1 hour**



Candidate forename		Candidate surname	
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Centre number							Candidate number				
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**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 **60**.
- This document consists of **20** pages. Any blank pages are indicated.

**WARNING**

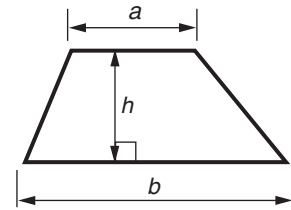


**No calculator can be used for this paper**

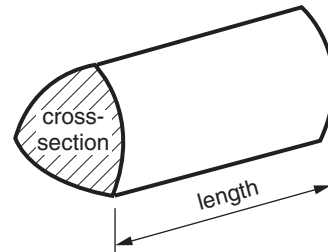
This paper has been pre modified for carrier language

## Formulae Sheet: Foundation Tier

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



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



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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]

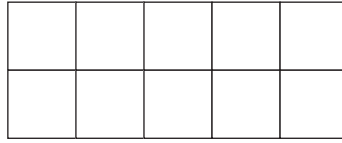
(c) A farmer fills egg boxes with eggs.

- 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 these statements 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 shape.  
Choose from this list.

Square

Rectangle

Rhombus

Trapezium

Parallelogram

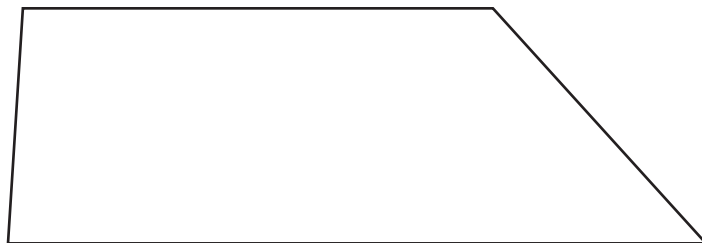
Kite



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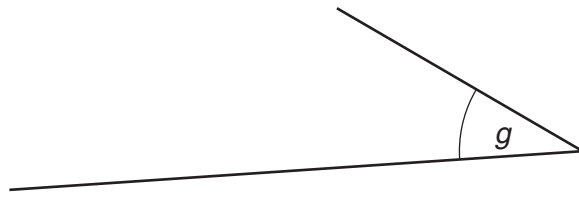
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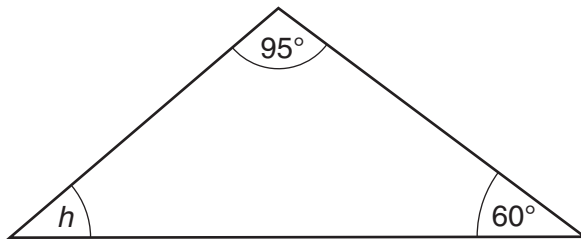
[3]

(b) What type of angle is angle  $g$ ?



(b) \_\_\_\_\_ [1]

(c)

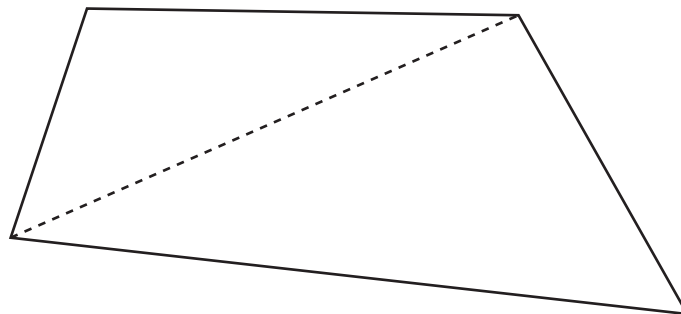


Not to scale

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  $360^\circ$ .

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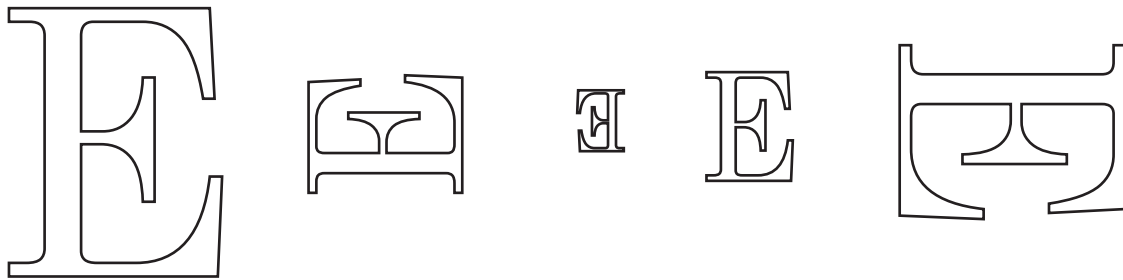
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[3]

- 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.



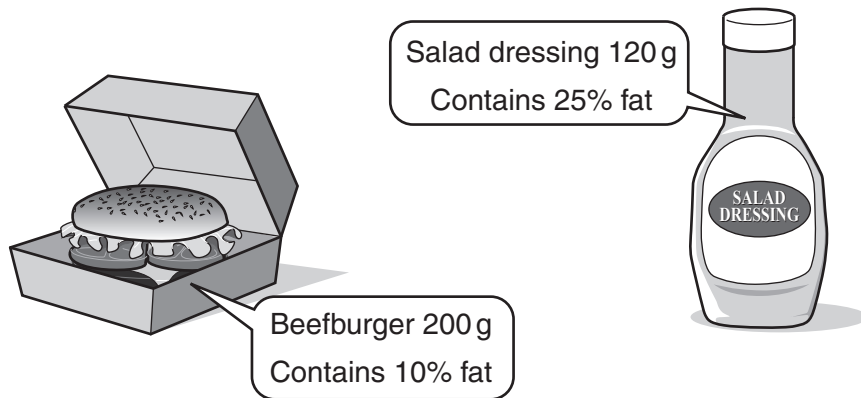
Draw a ring around each of the two letters that are **similar** to the G drawn above.



[2]



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



Work out how many grams of fat there are in

- (i) the beefburger,

(a)(i) \_\_\_\_\_ g [1]

- (ii) the salad dressing.

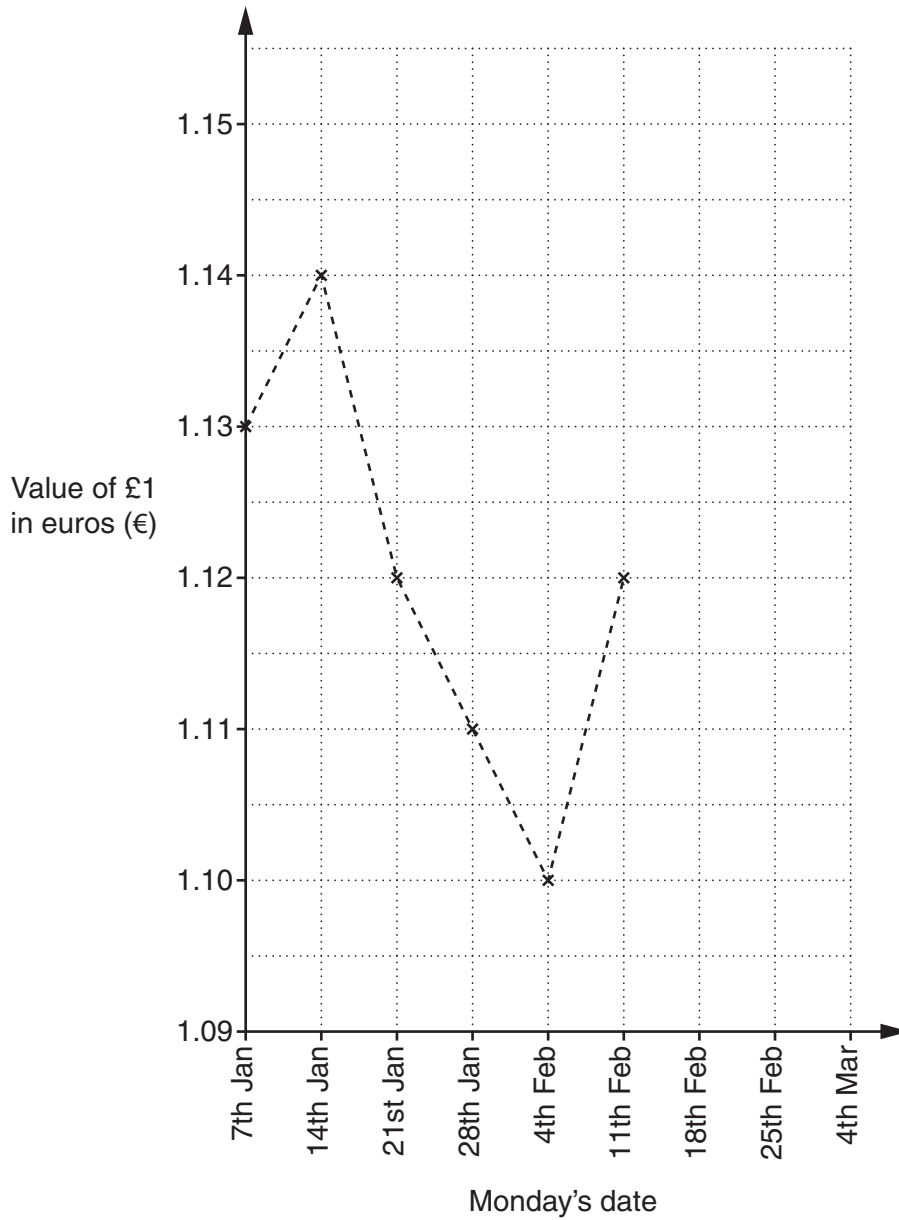
(ii) \_\_\_\_\_ g [2]

- (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 this time series graph.



- (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]

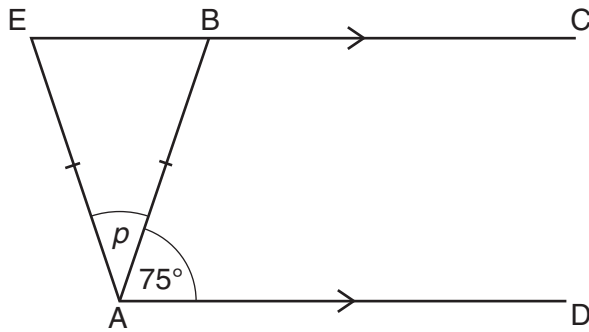
(c)\* On 28th Jan, Brody saw this phone for sale.



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

[4]

- 8 EBC is parallel to AD.  
Triangle ABE is isosceles with  $AE = AB$ .  
Angle BAD is  $75^\circ$ .

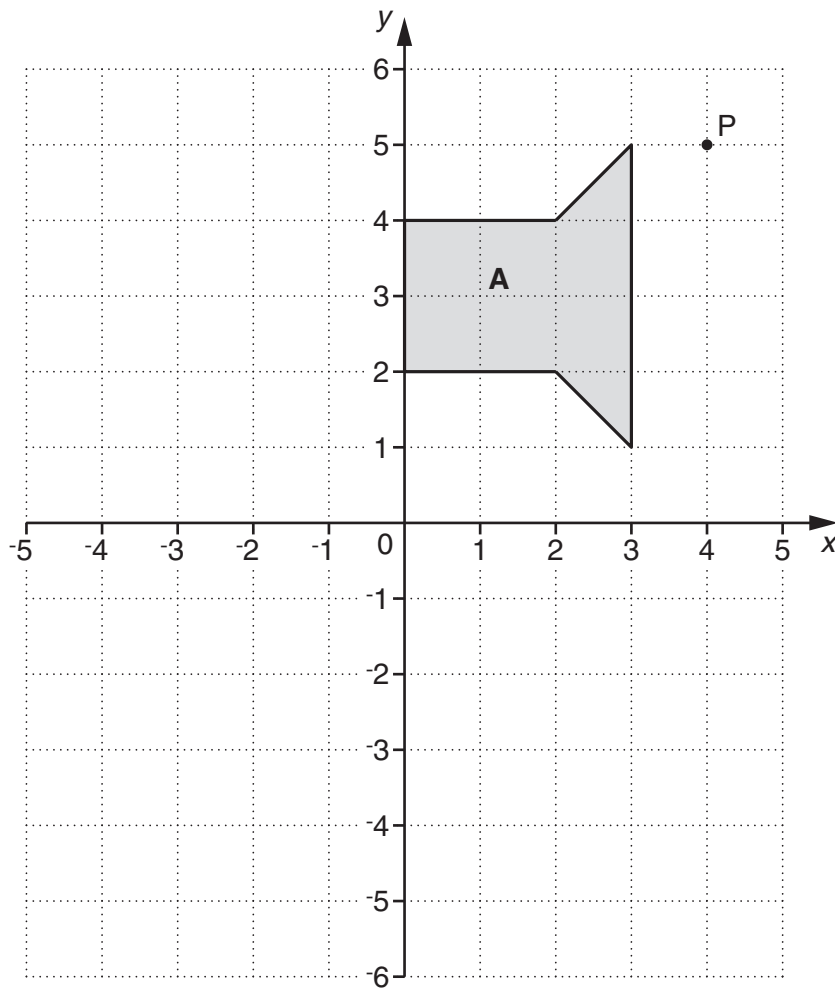


Not to scale

Work out the size of angle  $p$ .

\_\_\_\_\_  $^\circ$  [3]

- 9 The grid 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.

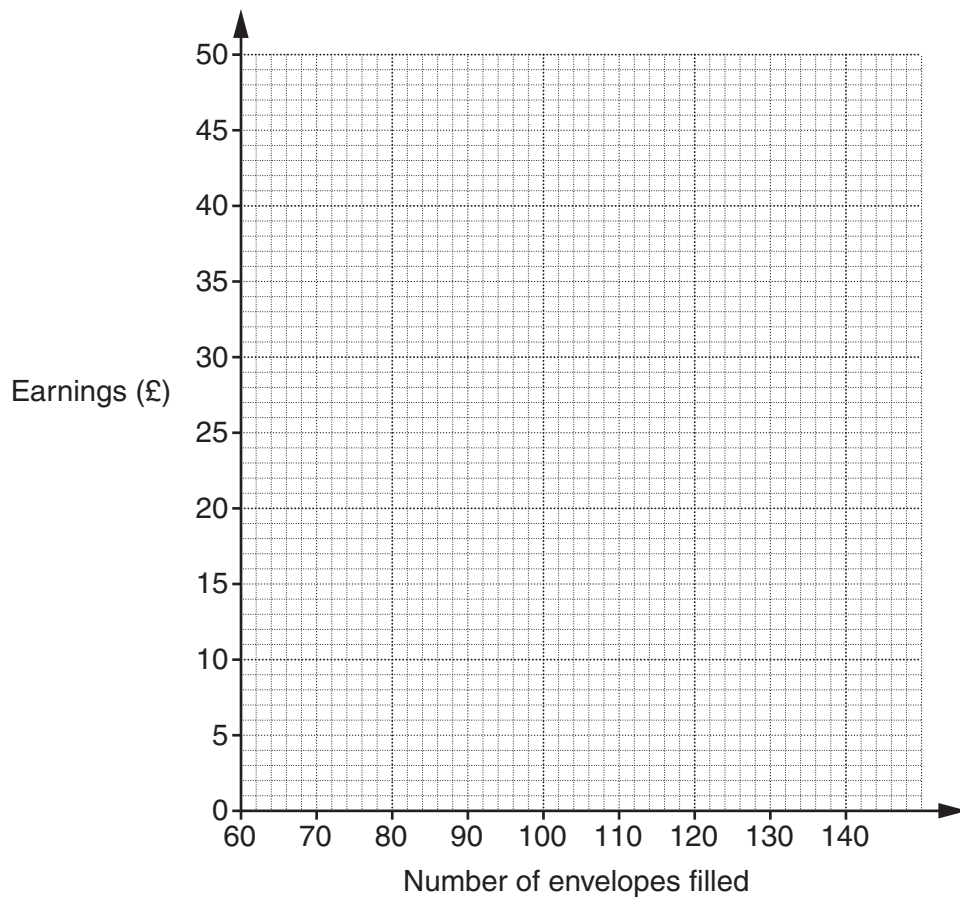
[2]

- 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]

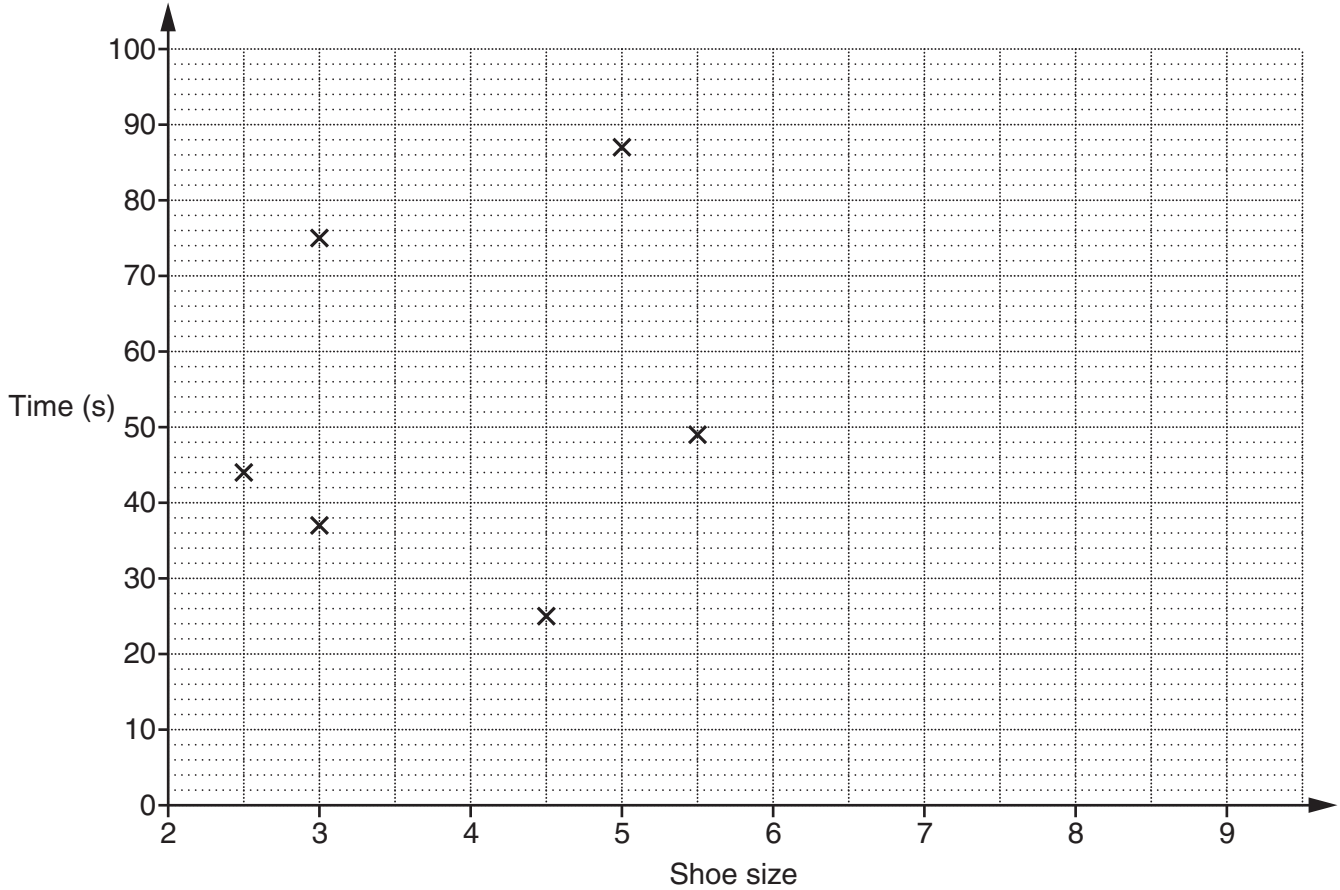
(ii) One day Alec and Lizzie find they have both earned the same amount of money and filled the same number of envelopes.

How many envelopes did they each fill?

(b)(ii) \_\_\_\_\_ [1]

- 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

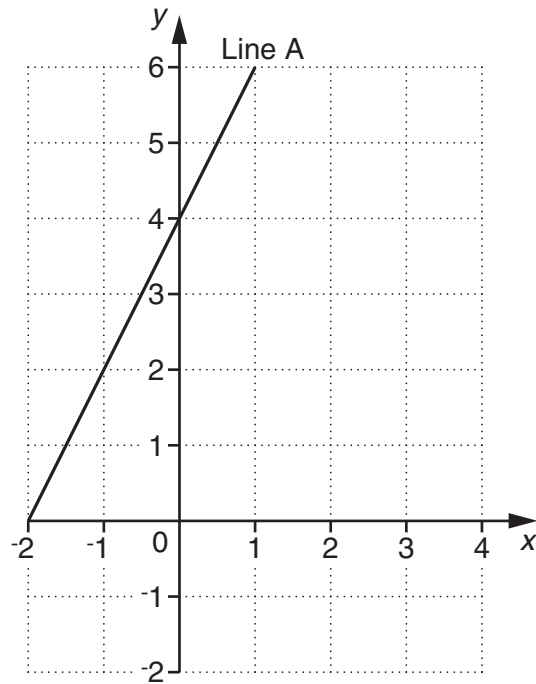
No correlation

Positive correlation

[1]



12 Line A is drawn on the grid.



(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**

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