OCR
RECOGNISING ACHIEVEMENT

F

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

A50201

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 **60**.
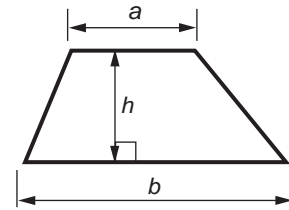* This document consists of **20** pages. Any blank pages are indicated.

WARNING

☒ **No calculator can be used for this paper**
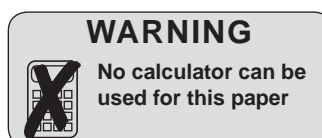
This paper has been pre modified for carrier language
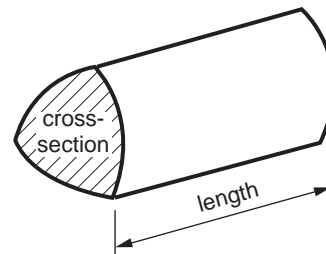
OCR is an exempt Charity

Turn over

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Formulae Sheet: Foundation Tier

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

Volume of prism = (area of cross-section) × 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]**
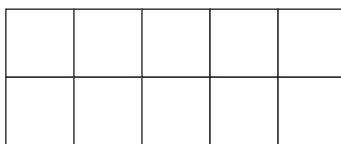
(c) A farmer fills egg boxes with eggs.

- 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]**

Turn over

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]**

Turn over

4 **(a)** Write the correct mathematical name under each shape.
Choose from this list.

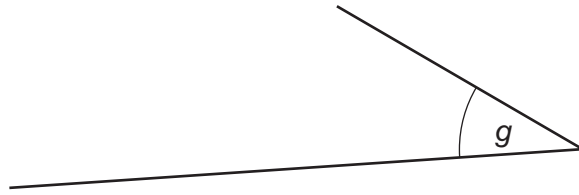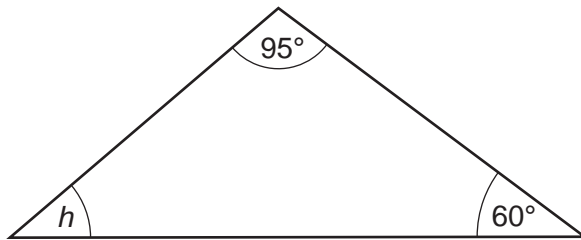| Square | Rectangle | Rhombus |
| Trapezium | Parallelogram | Kite |

_____

_____

_____

[3]
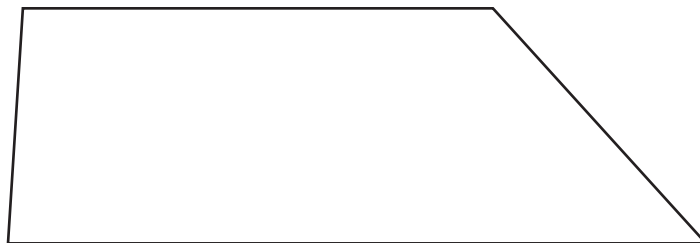
(b) What type of angle is angle *g*?

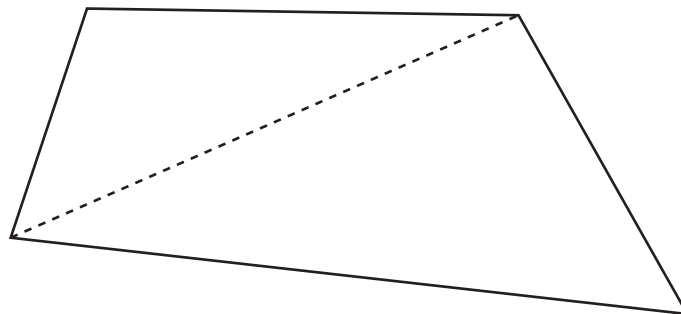**(b)** _____ **[1]**

(c)

95°

Not to scale

h

60°

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°.
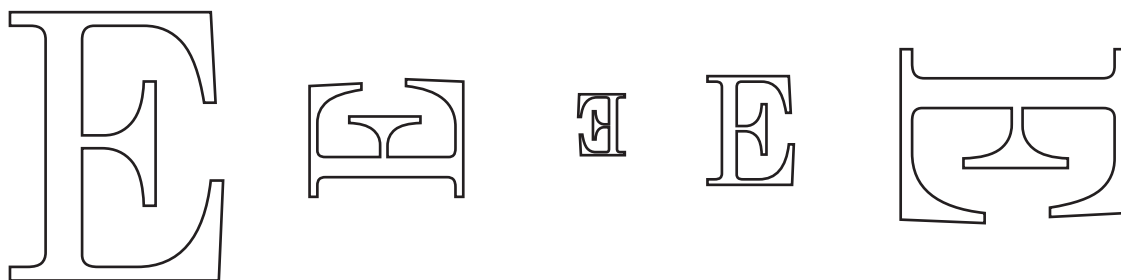
_____

_____

_____

_____ **[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.

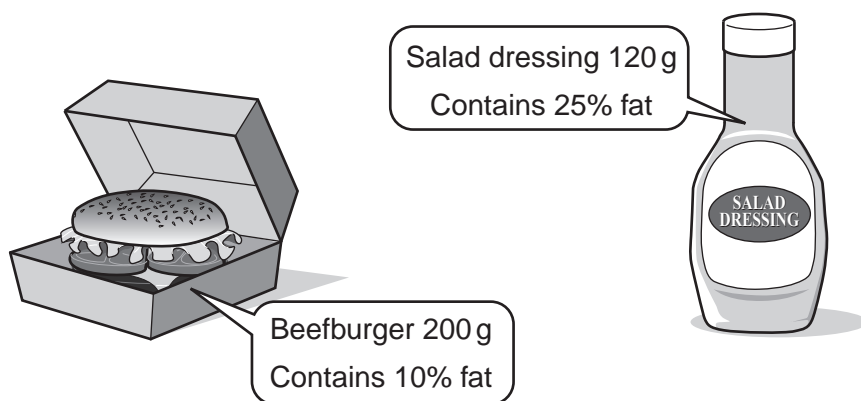Draw a ring around each of the two letters that are **similar** to the G drawn above.

[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]**

Turn over

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7   Brody records the value of £1 in euros (€) each Monday for six weeks.
    His results are shown in this time series graph.
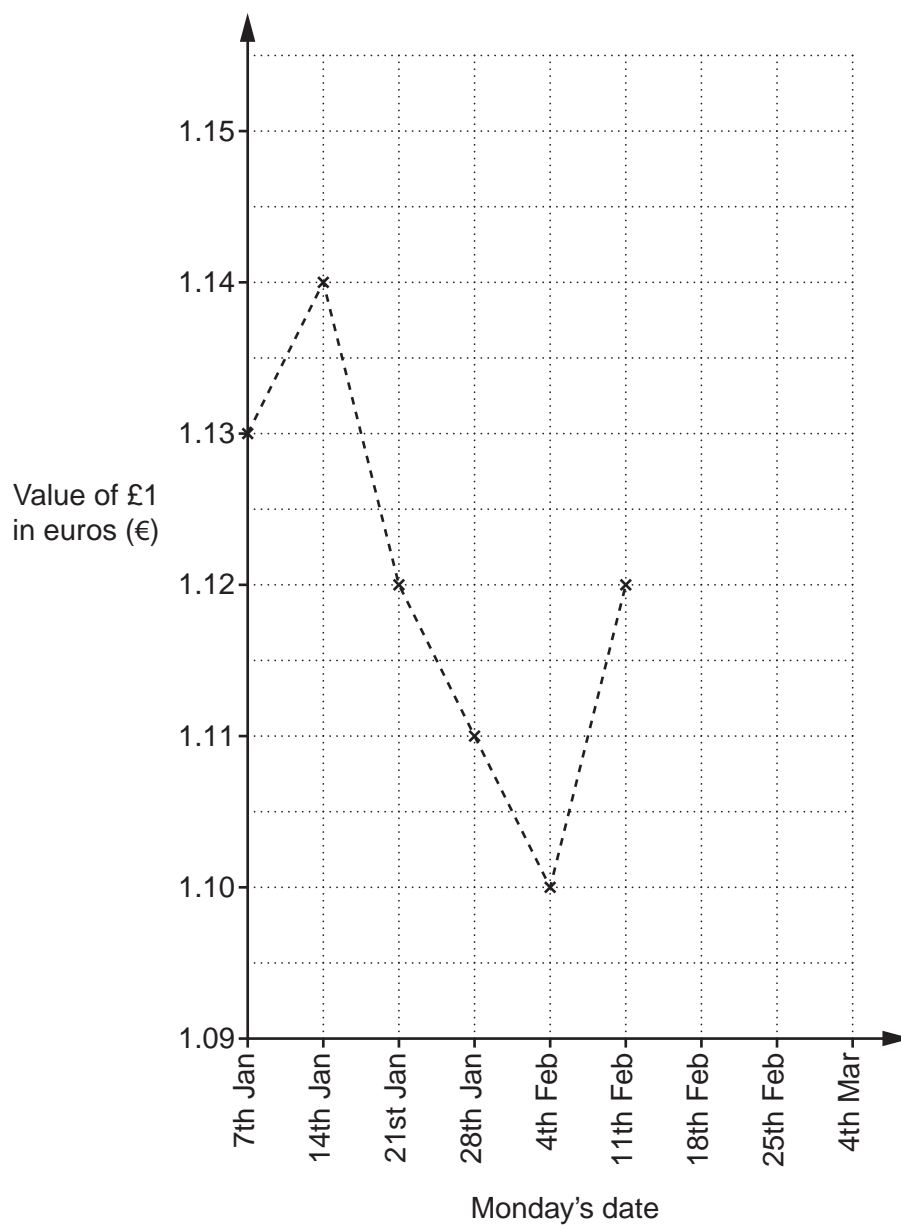
(a) Complete Brody's graph using these values for the next three Mondays.

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]**

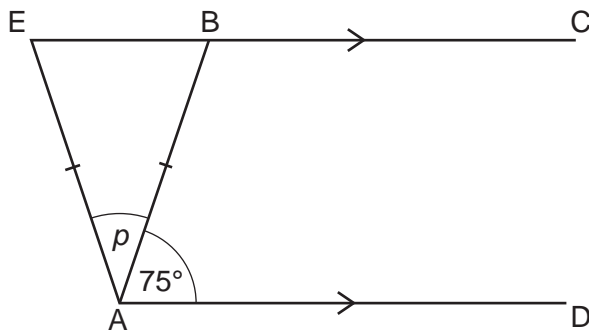**(c)*** On 28th Jan, Brody saw this phone for sale.

£100 or €120

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.
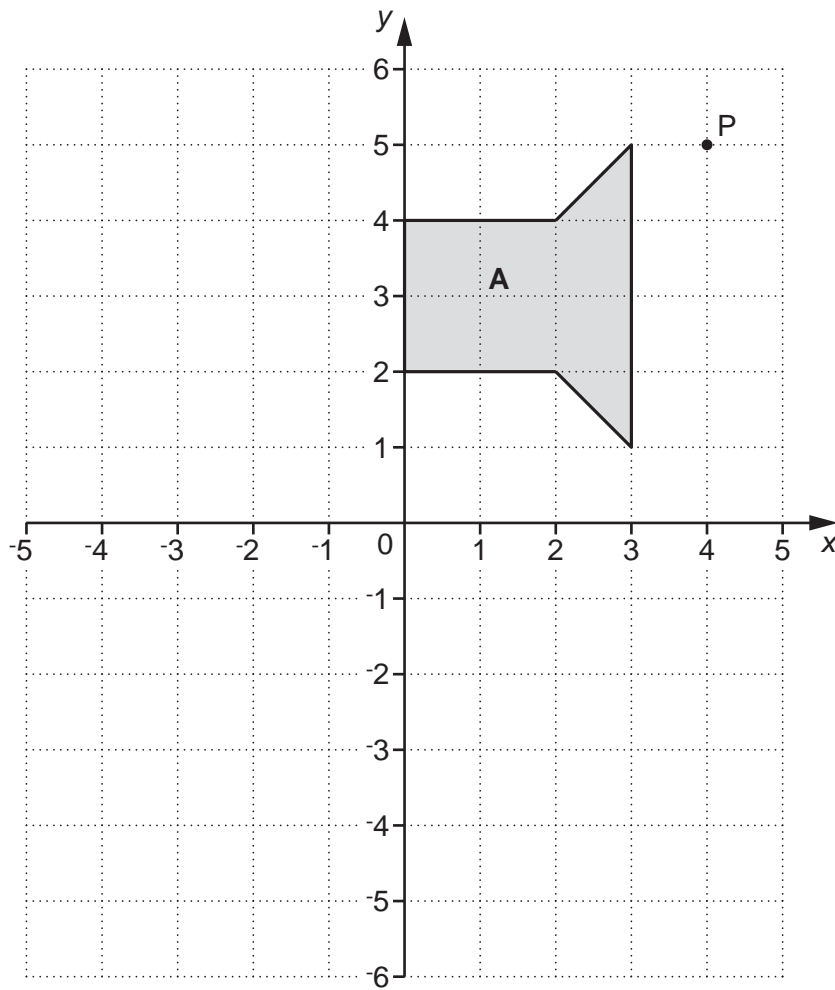Triangle ABE is isosceles with AE = AB.
Angle BAD is 75°.

Not to scale

Work out the size of angle *p*.

_____ ° **[3]**

9 The grid shows point P and shape **A**.

(a) Write down the coordinates of point P.

(a) (_____ , _____) **[1]**

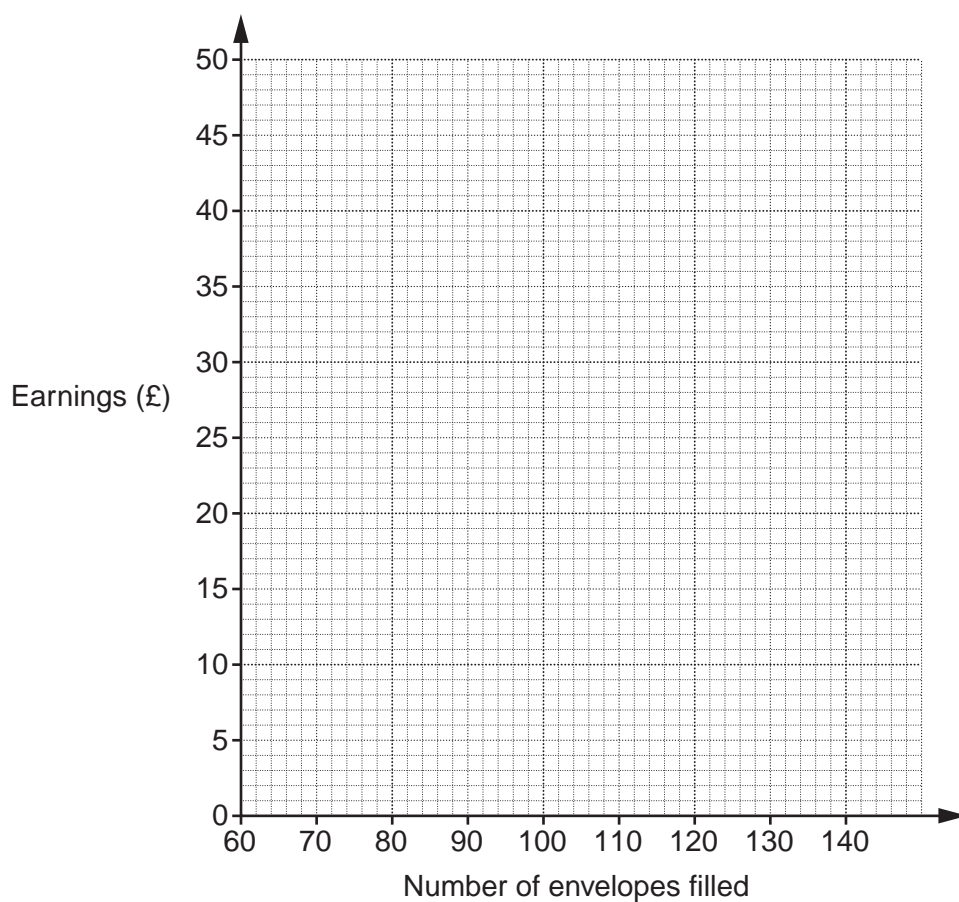**(b)** Draw the reflection of shape **A** in the *y*-axis. **[2]**

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]**

15

(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]**

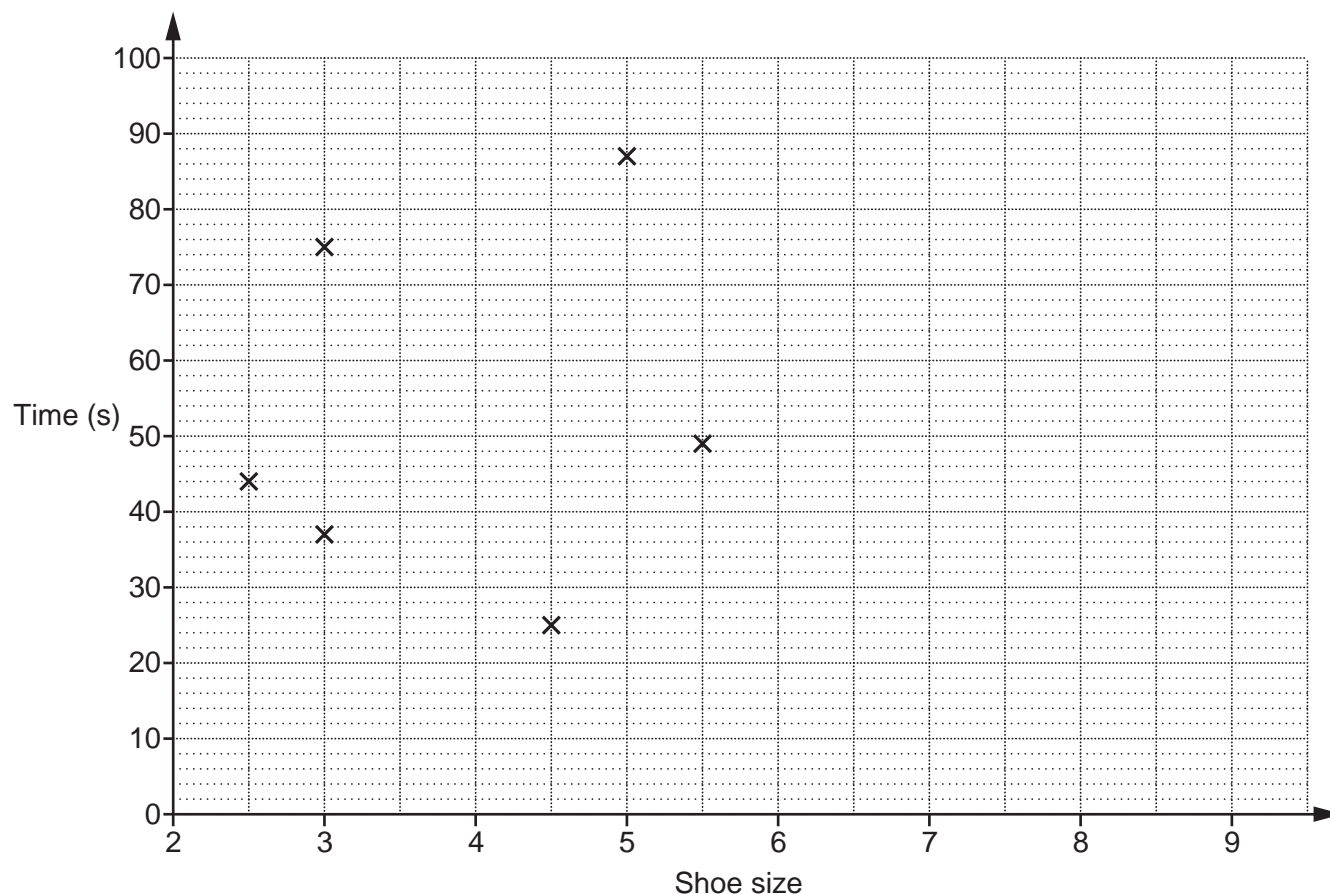 **(ii)** One day Alec and Lizzie find they have both earned the same amount of money and filled the same number of envelopes.

How many envelopes did they each fill?

(b)(ii) _____ **[1]**

Turn over

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   No   Positive
correlation   correlation   correlation

                                                                          [1]

12   Line A is drawn on the grid.
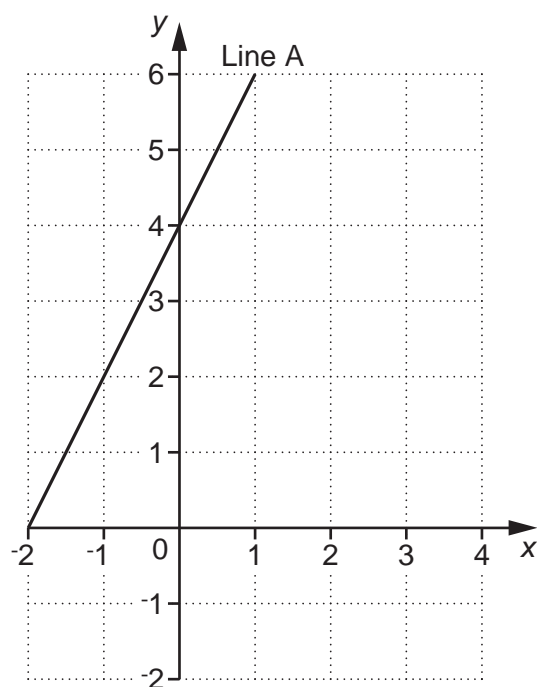
(a)   Write down the coordinates of the point where line A crosses the *y*-axis.

(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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