

Tuesday 15 January 2013 – Afternoon

GCSE MATHEMATICS A

A502/01 Unit B (Foundation Tier)

Candidates answer on the Question Paper.

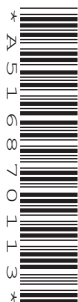
OCR supplied materials:

None

Other materials required:

- Geometrical instruments
- Tracing paper (optional)

Duration: 1 hour



Candidate forename		Candidate surname	
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

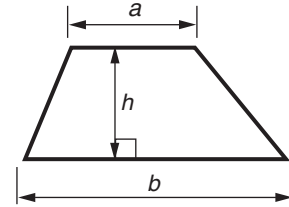


No calculator can be
used for this paper

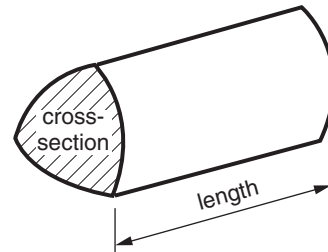
This paper has been pre modified for carrier language

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

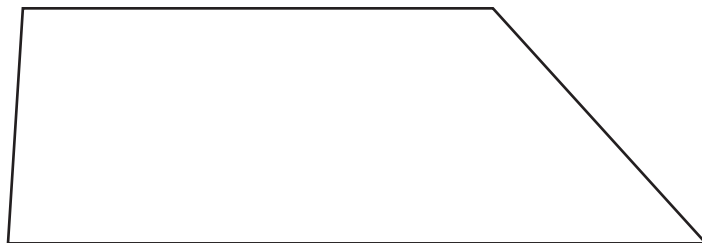
Trapezium

Parallelogram

Kite

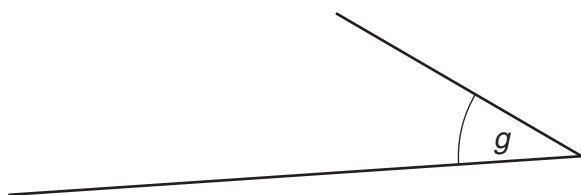






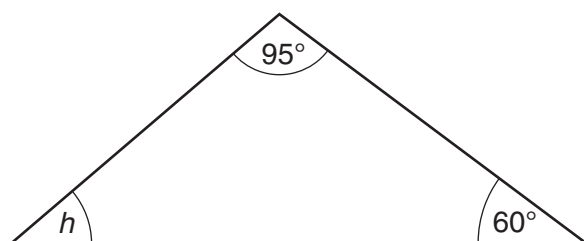
[3]

(b) What type of angle is angle g ?



(b) _____ [1]

(c)

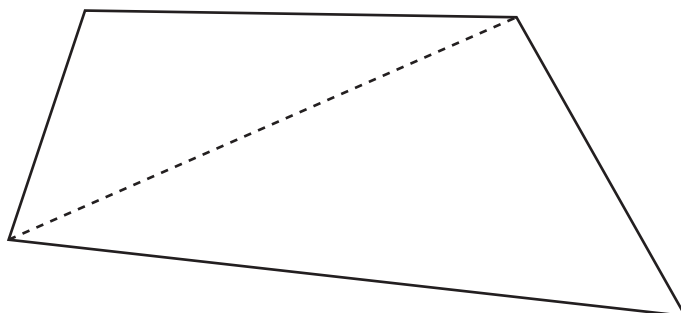


Not to scale

Work out angle h .

(c) _____ [2]

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



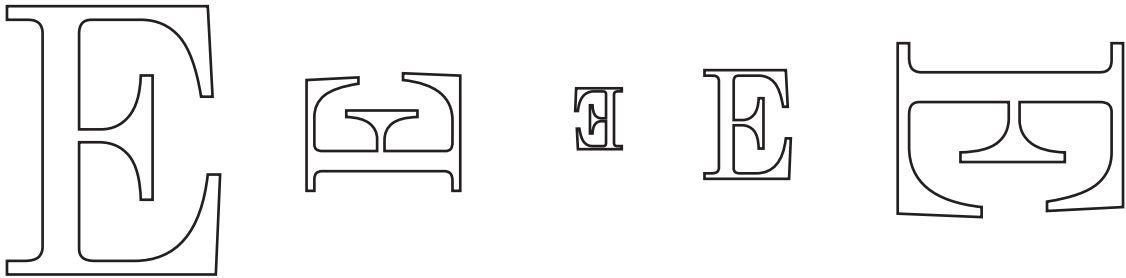
Without measuring, explain why the angles of a quadrilateral add up to 360° .

[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.

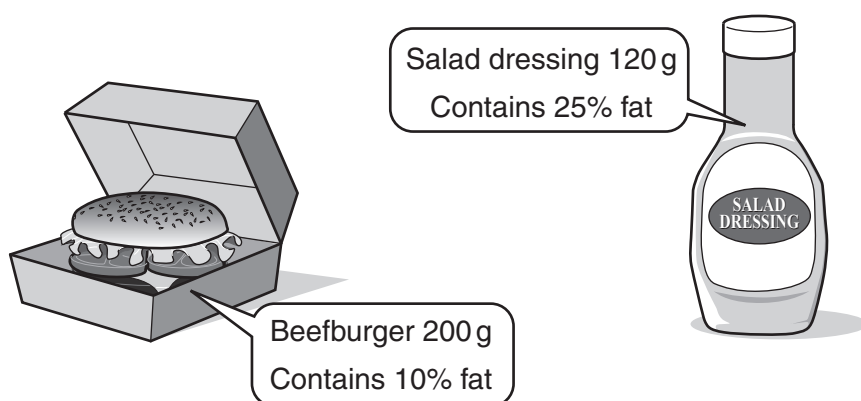


Draw a ring around each of the two letters that are **similar** to the G drawn above.



[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.

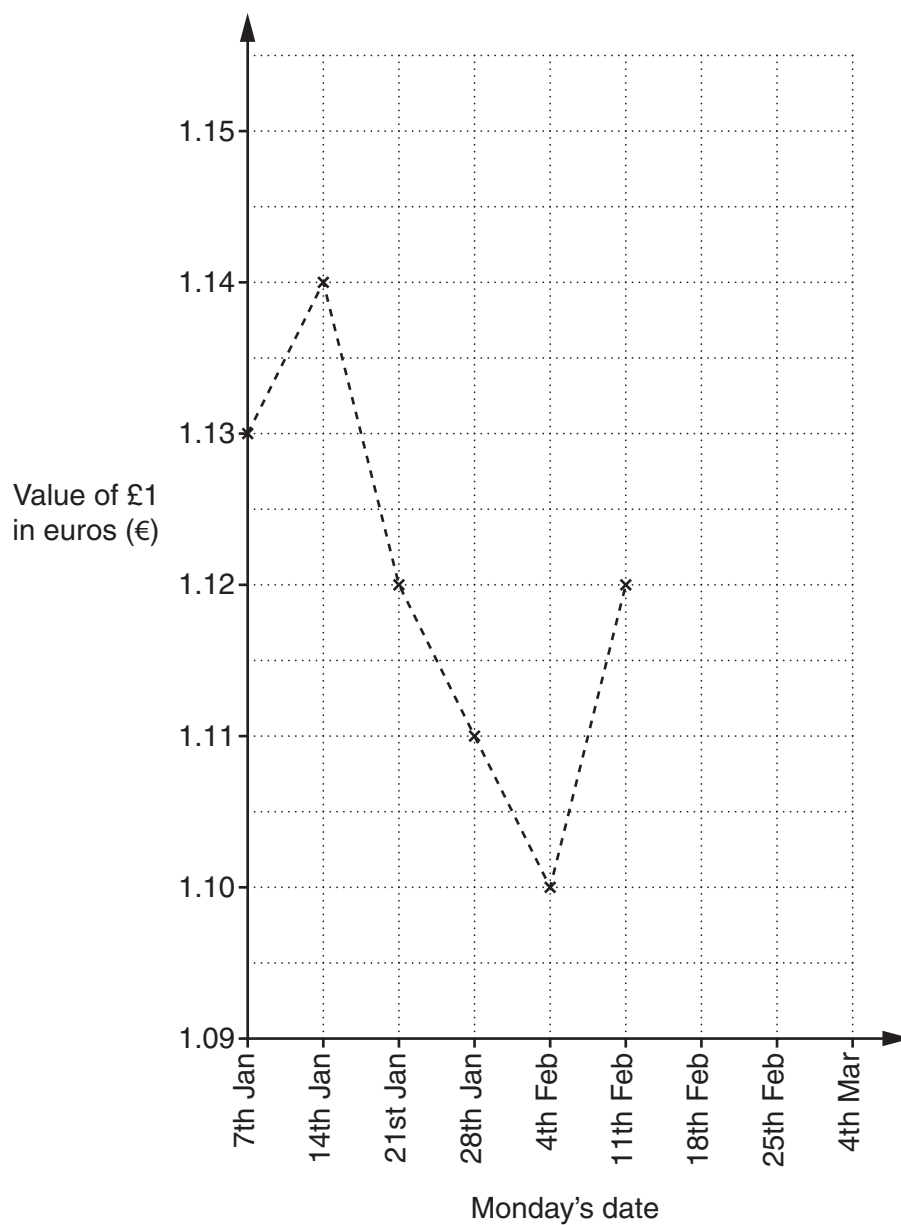
(ii) _____ g [2]

- (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]

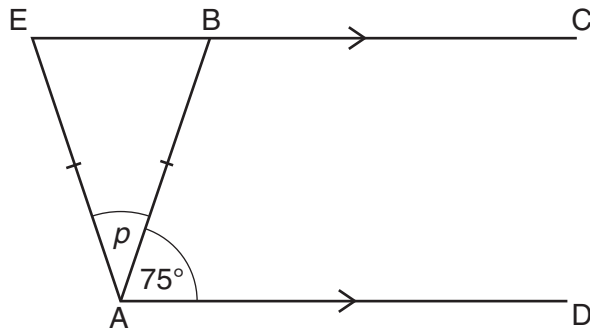
(c)* On 28th Jan, Brody saw this phone for sale.



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° .

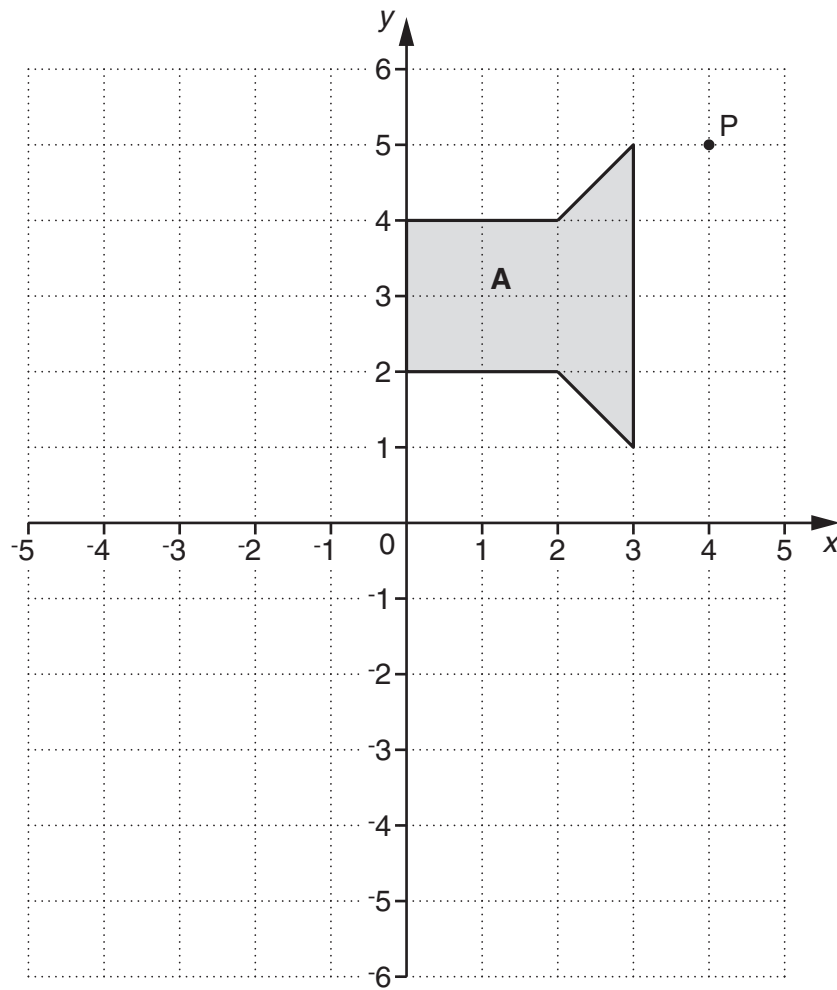


Not to scale

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.

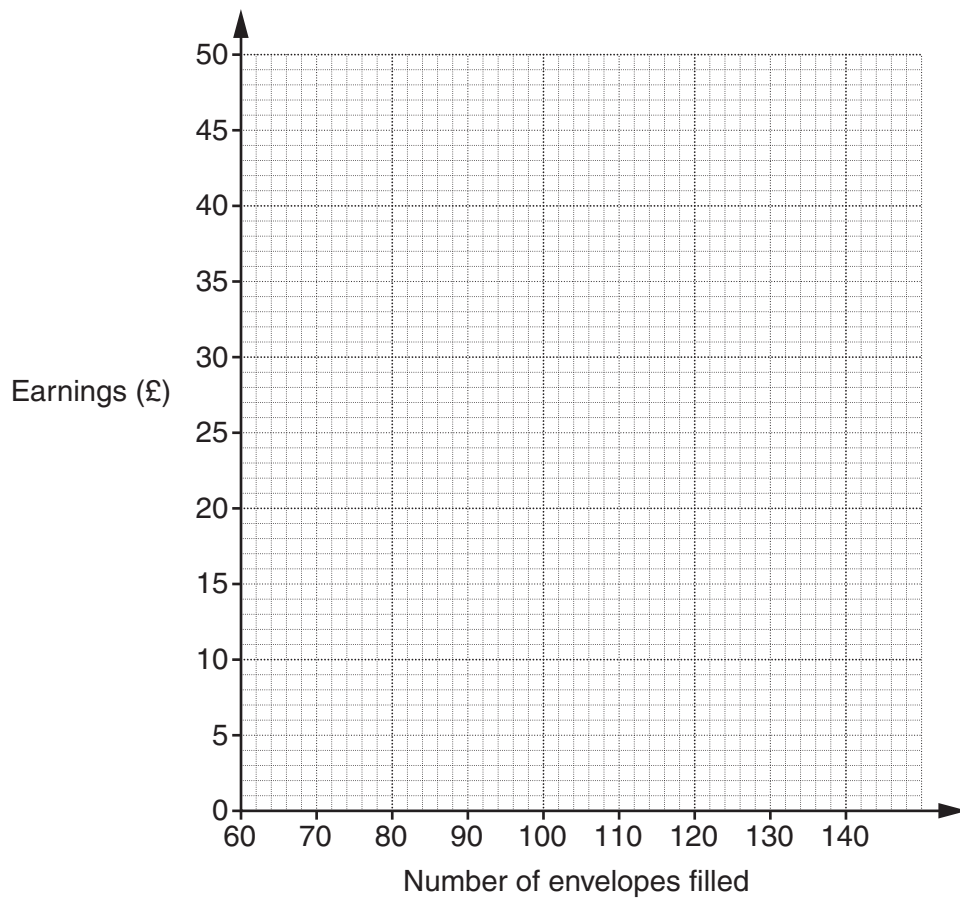
[2]

- 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]

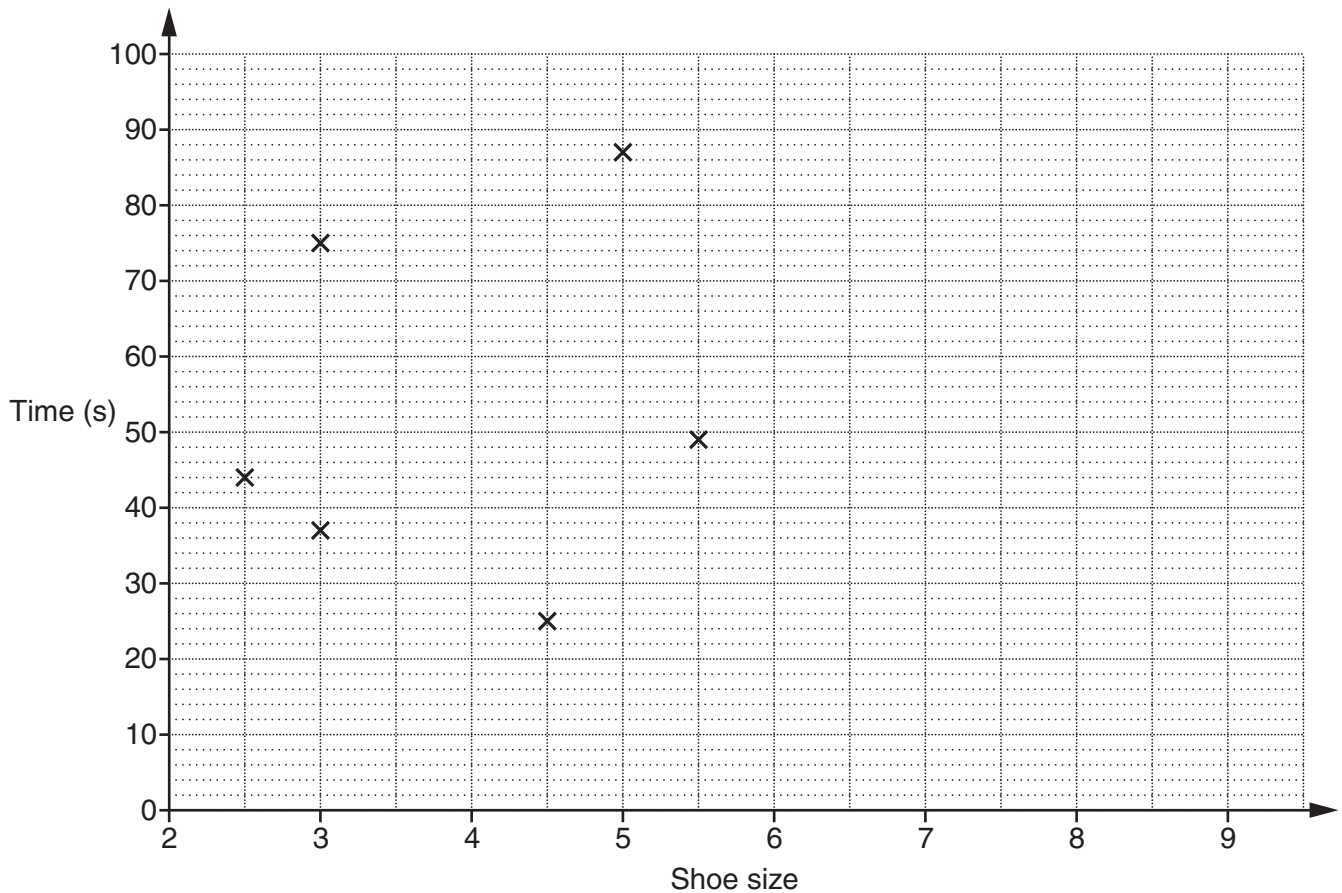
- (ii) One day Alec and Lizzie find they have both earned the same amount of money and filled the same number of envelopes.

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.

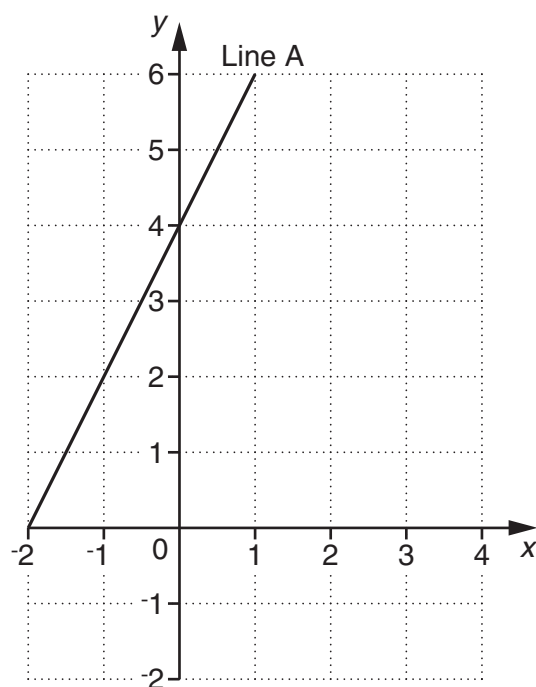
Negative
correlation

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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