

For AQA

General Certificate of Secondary Education

**MATHEMATICS (MODULAR)**

**Module 5 Foundation Tier**

**Paper A1 Non-Calculator**

**For this paper you must have:**

- mathematical instruments.

You must **not** use a calculator.



Time allowed: 1 hour 15 minutes

**Instructions and Information**

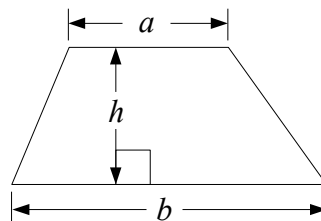
- Do not write on this question paper – use blank paper and the answer sheets provided.
- The maximum mark for this paper is 70.

**Advice**

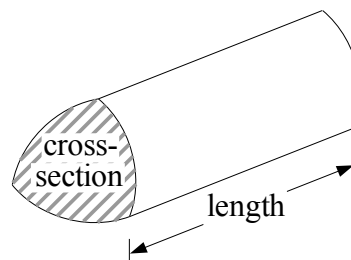
- In all calculations, show clearly how you work out your answer.

**Formulae: Foundation Tier**

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



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



*Churchill  
Maths*

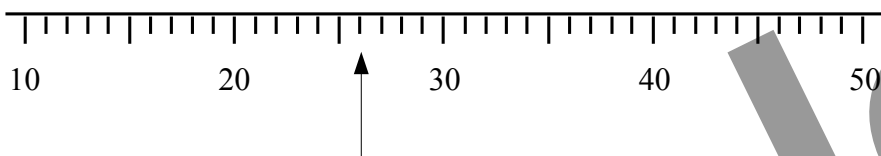


Written by Shaun Armstrong

Only to be copied for use in the purchaser's school or college

Answer **all** questions.

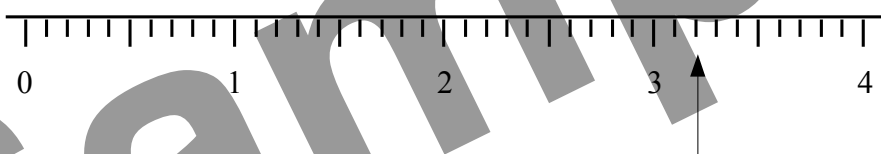
1 (a)



Write down the number shown by the arrow.

(1 mark)

(b)



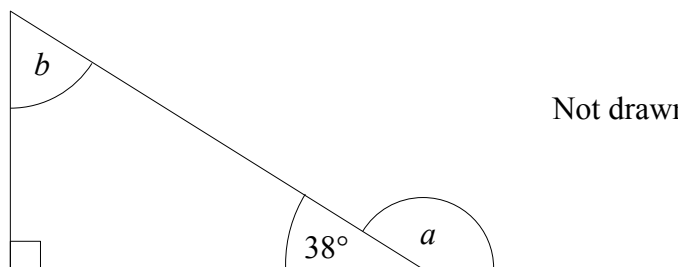
Write down the number shown by the arrow.

(1 mark)

(c) Draw an arrow on the diagram on the answer sheets to show the number 370.

(1 mark)

2



Not drawn accurately

(a) (i) Work out the size of angle  $a$ .

(1 mark)

(ii) Give a reason for your answer.

(1 mark)

(b) (i) Work out the size of angle  $b$ .

(1 mark)

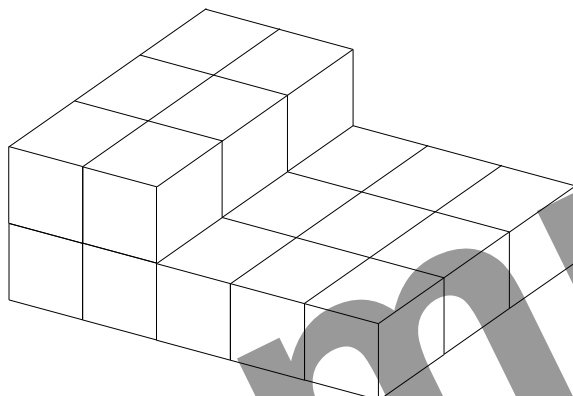
(ii) Give a reason for your answer.

(1 mark)

3 Tick (✓) each box in the table on the answer sheets if the shape has the stated symmetry.

(4 marks)

4



Not drawn accurately

Work out the volume of this prism made from centimetre cubes.

(2 marks)

5 (a) Which two of these fractions are equivalent to  $\frac{3}{4}$  ?

$\frac{12}{20}$     $\frac{8}{10}$     $\frac{6}{8}$     $\frac{16}{24}$     $\frac{21}{28}$     $\frac{15}{18}$     $\frac{25}{36}$

(2 marks)

(b) Express  $\frac{27}{45}$  as a fraction in its simplest form.

(2 marks)

6 Triangle  $ABC$  is shown on the answer sheets.

Shade the region inside the triangle which is less than 4 cm from the point  $C$ .

(2 marks)

7 (a) Work out the value of  $2^3 \times 10^2$

(2 marks)

(b) Write as a power of 6

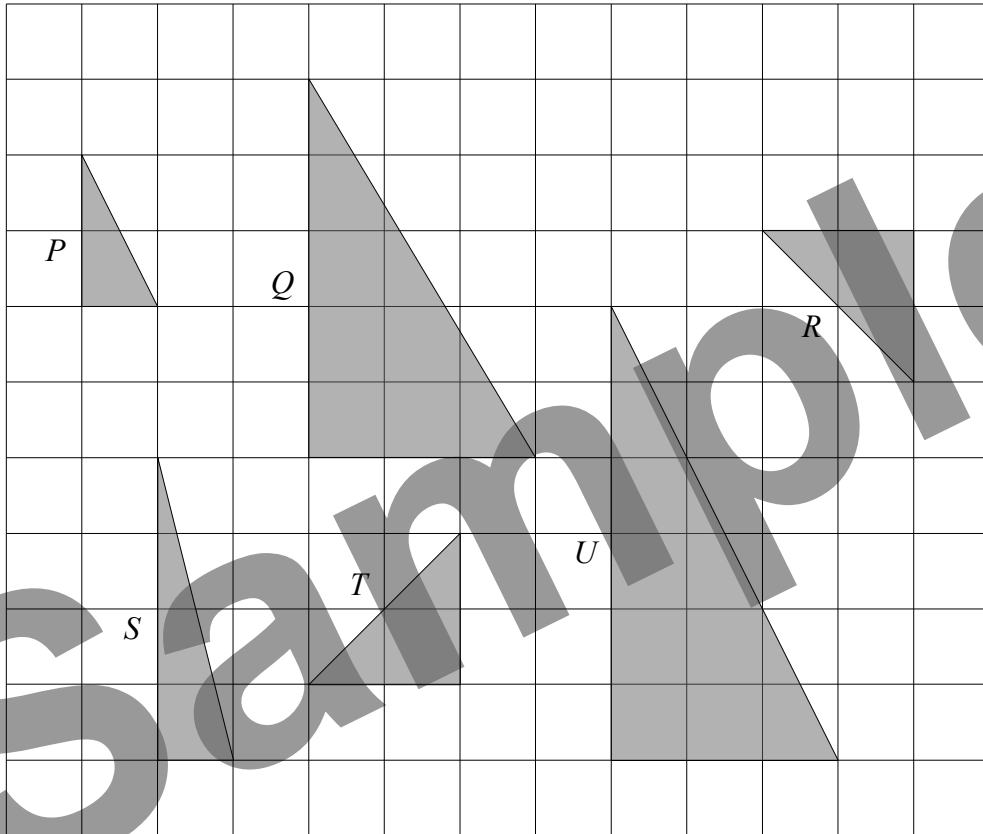
(i)  $6^7 \times 6^8$

(1 mark)

(ii)  $6^{11} \div 6^2$

(1 mark)

8

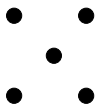


Six right-angled triangles are shown on the grid.

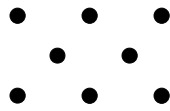
- (a) Which two triangles are congruent? (1 mark)
- (b) (i) Which triangle is an enlargement of triangle  $P$ ? (1 mark)
- (ii) Write down the scale factor of the enlargement. (1 mark)
- (c) On the grid on the answer sheets, rotate the shaded triangle  $90^\circ$  clockwise about the point marked with a cross. (2 marks)

- 9 (a) Expand  $3(x + 4)$  (1 mark)
- (b) Factorise  $y^2 + 7y$  (1 mark)
- (c) Work out the value of  $2p - 3q$  when  $p = 12$  and  $q = 5$ . (2 marks)

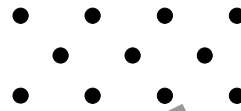
10 Here are some patterns made with dots.



Pattern number 1



Pattern number 2



Pattern number 3

(a) Draw Pattern number 4.

(1 mark)

(b) How many dots will there be in

(i) Pattern number 5,

(1 mark)

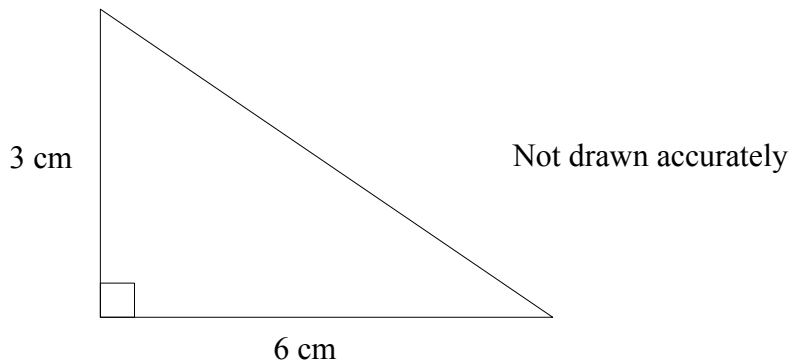
(ii) Pattern number 10.

(1 mark)

(c) Find an expression, in terms of  $n$ , for the number of dots in Pattern number  $n$ .

(3 marks)

11



The diagram shows a right-angled triangle.

(a) Work out the area of the triangle.

(2 marks)

The triangle is the cross-section of a prism of length 8 cm.

(b) Work out the volume of the prism.

(2 marks)

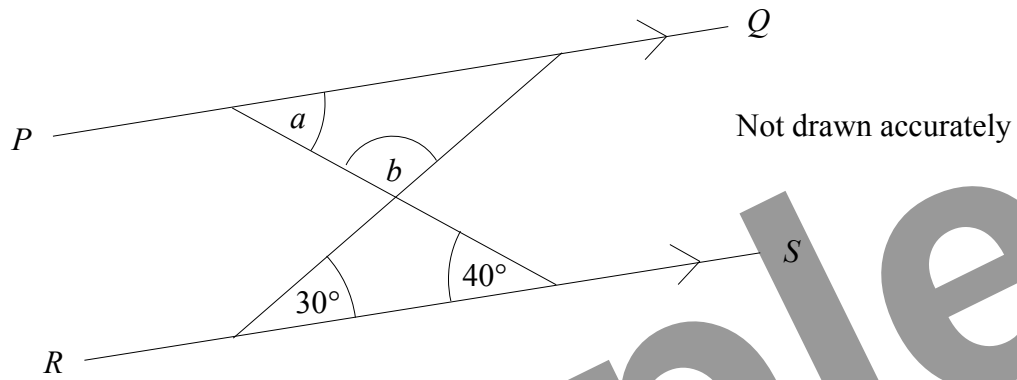
12 (a) On the grid on the answer sheets, draw the graph of  $y = 2x - 3$

(3 marks)

(b) Use your graph to solve the equation  $2x - 3 = 1.4$

(1 mark)

13 (a)



The lines  $PQ$  and  $RS$  are parallel.

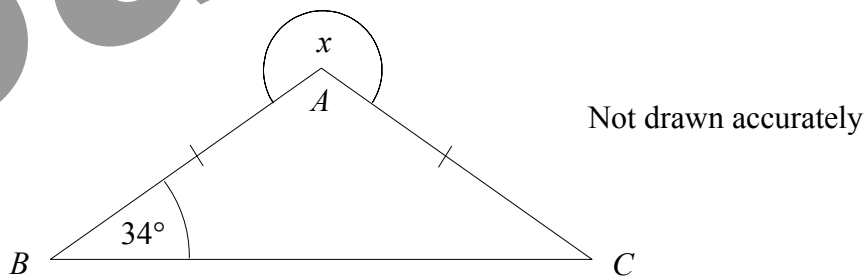
(i) Write down the size of the angle marked  $a$ .  
Give a reason for your answer.

(2 marks)

(ii) Find the size of the angle marked  $b$ .

(2 marks)

(b)



In the diagram,  $AB = AC$  and angle  $ABC = 34^\circ$ .  
Find the size of the angle marked  $x$ .

(3 marks)

14 Solve

(a)  $a + 5 = 11$

(1 mark)

(b)  $2t - 1 = 19$

(2 marks)

(c)  $3(y - 4) = 2y$

(3 marks)

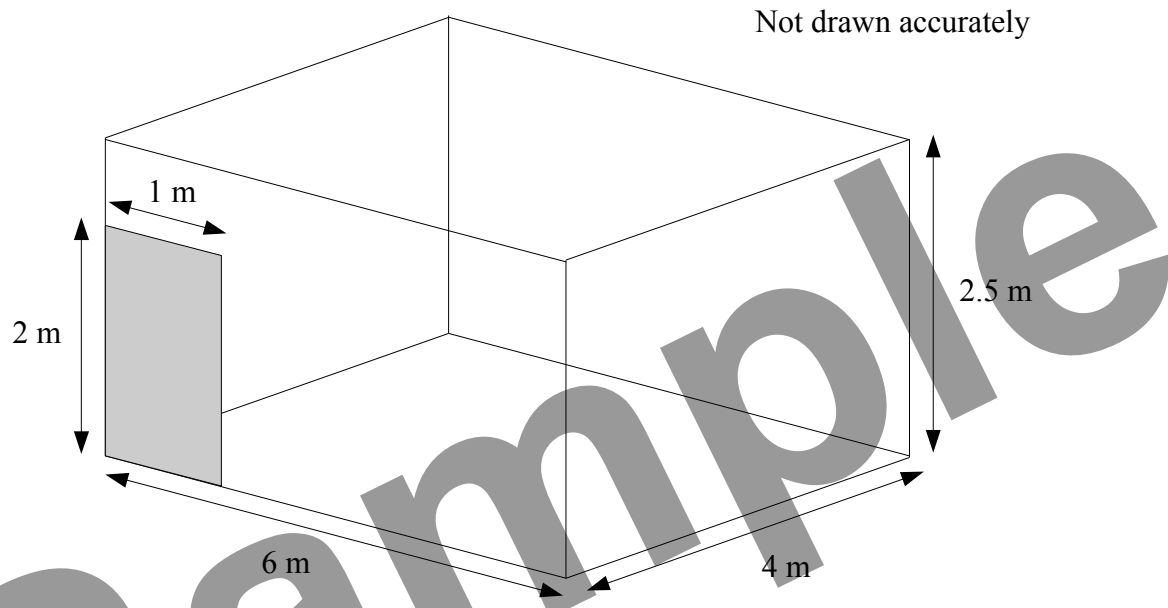
15  $-1 \leq x < 3$

$x$  is an integer.

Write down all the possible values of  $x$ .

(2 marks)

16



The diagram shows the dimensions of Brian's dining room.  
He wants wallpaper hung on all four walls except for the door which is shaded.

Work out the total area that he wants covered with wallpaper.

*(3 marks)*

17 Adrian is a waiter.

At one of his tables the bill is for £72.  
The customer at this table gives Adrian a tip of 10% of the bill.

At another of his tables the bill is for £60.  
The customer at this table gives Adrian a tip of 15% of the bill.

Work out how much more Adrian gets as a tip from the second table than from the first table.

*(4 marks)*

18 Expand and simplify  $(x + 3)(x + 5)$

*(2 marks)*

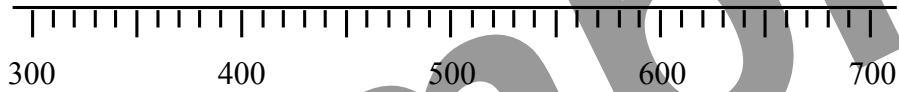
**END**

For AQA

Name

**Answer Sheets for Foundation Tier, Module 5 Paper A1**

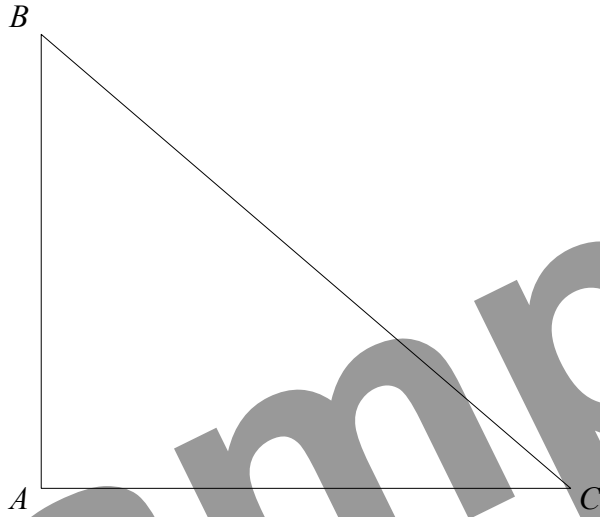
1 (c)



3

	Exactly one line of symmetry	Exactly two lines of symmetry	Rotational symmetry of order 2

6



8

(c)

