



Cambridge IGCSE™

CANDIDATE
NAME
CENTRE
NUMBER

--	--	--	--	--

CANDIDATE
NUMBER

--	--	--	--

CAMBRIDGE INTERNATIONAL MATHEMATICS**0607/52**

Paper 5 Investigation (Core)

October/November 2020**1 hour 10 minutes**

You must answer on the question paper.

No additional materials are needed.

INSTRUCTIONS

- Answer **all** questions.
- Use a black or dark blue pen. You may use an HB pencil for any diagrams or graphs.
- Write your name, centre number and candidate number in the boxes at the top of the page.
- Write your answer to each question in the space provided.
- Do **not** use an erasable pen or correction fluid.
- Do **not** write on any bar codes.
- You should use a graphic display calculator where appropriate.
- You may use tracing paper.
- You must show all necessary working clearly, including sketches, to gain full marks for correct methods.
- In this paper you will be awarded marks for providing full reasons, examples and steps in your working to communicate your mathematics clearly and precisely.

INFORMATION

- The total mark for this paper is 36.
- The number of marks for each question or part question is shown in brackets [].

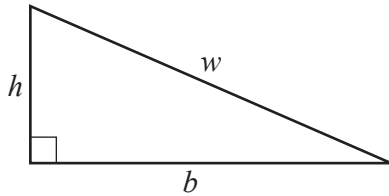
This document has **8** pages. Blank pages are indicated.

2

Answer **all** the questions.**INVESTIGATION AREA OF RIGHT-ANGLED TRIANGLES**

This investigation looks at finding the area of a right-angled triangle using its perimeter.

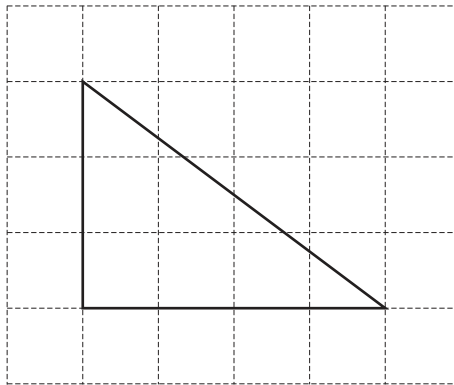
In this investigation all lengths are in centimetres.



w is the hypotenuse of the triangle,
 b is the base of the triangle,
 h is the height of the triangle.

Perimeter, P , of this triangle. $P = b + h + w$

Area, A , of this triangle. $A = \frac{1}{2}bh$

1 (a)

This right-angled triangle is drawn on a 1 cm^2 grid.

(i) Measure and write down the length of the hypotenuse.

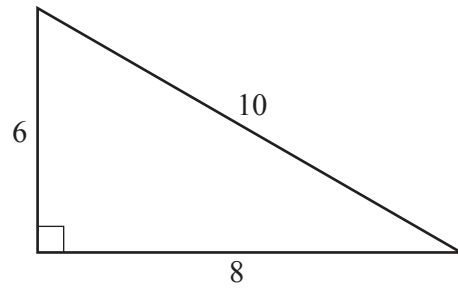
..... [1]

(ii) Show that the perimeter is 12.

[1]

(iii) Find the area of the triangle.

..... [1]

3**(b)**NOT TO
SCALE

- (i)** Find the perimeter of this triangle.

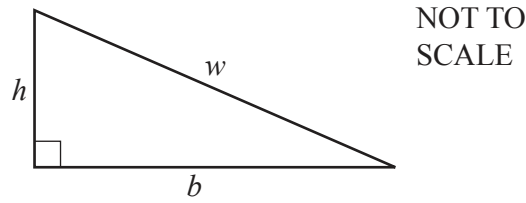
..... [2]

- (ii)** Find the area of this triangle.

..... [2]

4

(c)



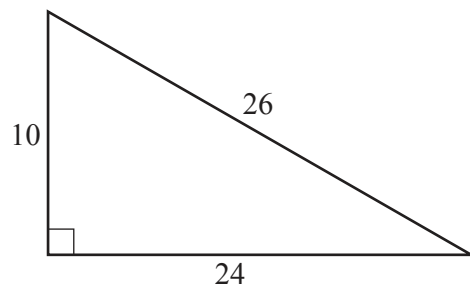
Complete the table for right-angled triangles with sides b , h and w .

b	h	w	Perimeter, P	Area, A
12	5	13	30	30
84	13	85		
24		25	56	84
60	11		132	

[5]

5

2 (a)

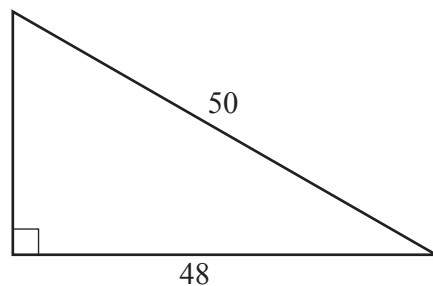
NOT TO
SCALE

This triangle has perimeter $P = 60$.

Show that the calculation $\frac{60}{2} \times \left(\frac{60}{2} - 26 \right)$ gives the correct area for this triangle.

[3]

(b)

NOT TO
SCALE

This triangle has perimeter $P = 112$.

Show that the calculation $\frac{112}{2} \times \left(\frac{112}{2} - 50 \right)$ gives the correct area for this triangle.

[3]

3 (a) Complete the table.

b	h	w	P	A	Calculation
24	10	26	60	120	$\frac{60}{2} \times \left(\frac{60}{2} - 26\right) = 120$
12	9	15	36	54	$\frac{36}{2} \times \left(\frac{36}{2} - 15\right) = 54$
48		50	112		$\frac{112}{2} \times \left(\frac{112}{2} - 50\right) =$
15	8	17		60	$= 60$
21		29	70	210	$=$
	12	37		210	$=$

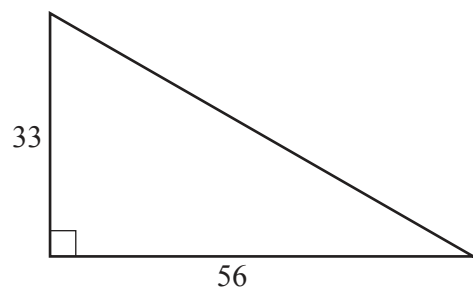
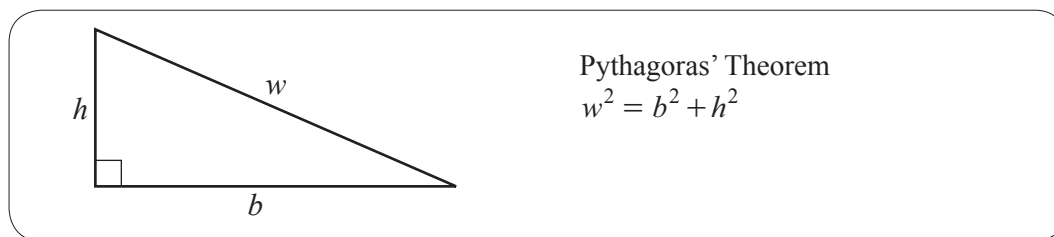
[8]

(b) Write an expression for the area of a right-angled triangle in terms of P and w .

..... [1]

7

(c)

NOT TO
SCALE

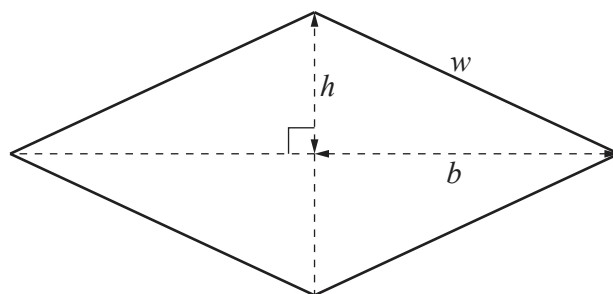
Use your expression from **part (b)** to find the area of this triangle.

..... [4]

Question 4 is printed on the next page.

8

4 (a)

NOT TO
SCALE

This is a rhombus.

Use **Question 3(b)** to write down an expression for the area of this rhombus in terms of P and w .

..... [1]

(b) Use your expression from **part (a)** to find the area of this rhombus when $w = 41$ and $b = 40$.

..... [4]

Permission to reproduce items where third-party owned material protected by copyright is included has been sought and cleared where possible. Every reasonable effort has been made by the publisher (UCLES) to trace copyright holders, but if any items requiring clearance have unwittingly been included, the publisher will be pleased to make amends at the earliest possible opportunity.

To avoid the issue of disclosure of answer-related information to candidates, all copyright acknowledgements are reproduced online in the Cambridge Assessment International Education Copyright Acknowledgements Booklet. This is produced for each series of examinations and is freely available to download at www.cambridgeinternational.org after the live examination series.

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