Cambridge IGCSE

Cambridge Assessment International Education
Cambridge International General Certificate of Secondary Education (9–1)

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER			

4260188348

MATHEMATICS **0626/05**

Paper 5 (Core) **October/November 2019**

2 hours

Candidates answer on the Question Paper.

Additional Materials: Geometrical instruments
Tracing paper (optional)

READ THESE INSTRUCTIONS FIRST

Write your centre number, candidate number and name on all the work you hand in.
Write in dark blue or black pen.
You may use an HB pencil for any diagrams and graphs.
Do not use staples, paper clips, glue or correction fluid.
DO **NOT** WRITE IN ANY BARCODES.

Answer **all** questions.
Electronic calculators should be used.
If working is required for any question it must be shown below that question.
If the degree of accuracy is not specified in the question, and if the answer is not exact, give the answer to three significant figures. Give answers in degrees to one decimal place.
For π, use either your calculator value or 3.142.

At the end of the examination, fasten all your work securely together.
The number of marks is given in brackets [ ] at the end of each question or part question.
The total of the marks for this paper is 96.

This syllabus is regulated for use in England as a Cambridge International Level 1/Level 2 IGCSE (9–1) Certificate.

DC (NF/SW) 164778/3
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1 **(a)** This shape is a quadrilateral.

(i) What is the mathematical name of this quadrilateral?

..... [1]

(ii) How many lines of symmetry does this quadrilateral have?

..... [1]

(iii) What is the order of rotational symmetry of this quadrilateral?

..... [1]

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(b) (i) A different quadrilateral has

- all its sides the same length
- only 2 lines of symmetry.

What is the mathematical name of this quadrilateral?

..... [1]

(ii) Another quadrilateral has

- 2 pairs of adjacent sides the same length
- only 1 line of symmetry.

What is the mathematical name of this quadrilateral?

..... [1]

(c) All the angles in a triangle are the same size.

What is the mathematical name of this triangle?

..... [1]

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[Turn over

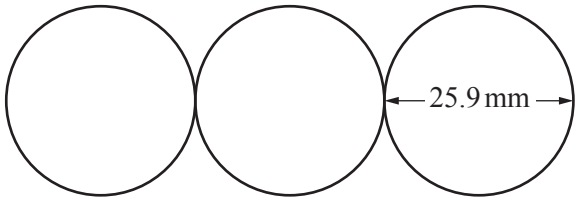
2 **(a)** Jenny saves 1p, 2p and 5p coins.
She has saved a total of £7.43.

Complete the table to show the number of 5p coins she has saved.

Coin	Number of coins
1p	132
2p	93
5p	

[4]

(b) A hospital is raising money by collecting 2p coins.
The target is to collect 2p coins so that they would be one kilometre long when they are placed edge-to-edge in a straight line.



NOT TO SCALE

A 2p coin is 25.9 mm in diameter.
The hospital meets their target of one kilometre.

Work out the total amount of money raised.
Give your answer in pounds.

£ ..... [4]

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3 This is the list of ingredients for a recipe for making shortbread biscuits.

Ingredients to make 25 biscuits
250 g flour 100 g sugar 175 g butter

(a) Write the ratio flour : sugar : butter in its simplest form.

..... : ..... : ..... [2]

(b) How much sugar is needed to make 40 shortbread biscuits?

..... g [2]

(c) George is making shortbread biscuits for a party using this recipe.
He wants to make as many biscuits as possible.
He has 1.5 kg of flour, 0.5 kg of sugar and 1 kg of butter.

Show that the greatest number of biscuits George can make is 125.

[4]

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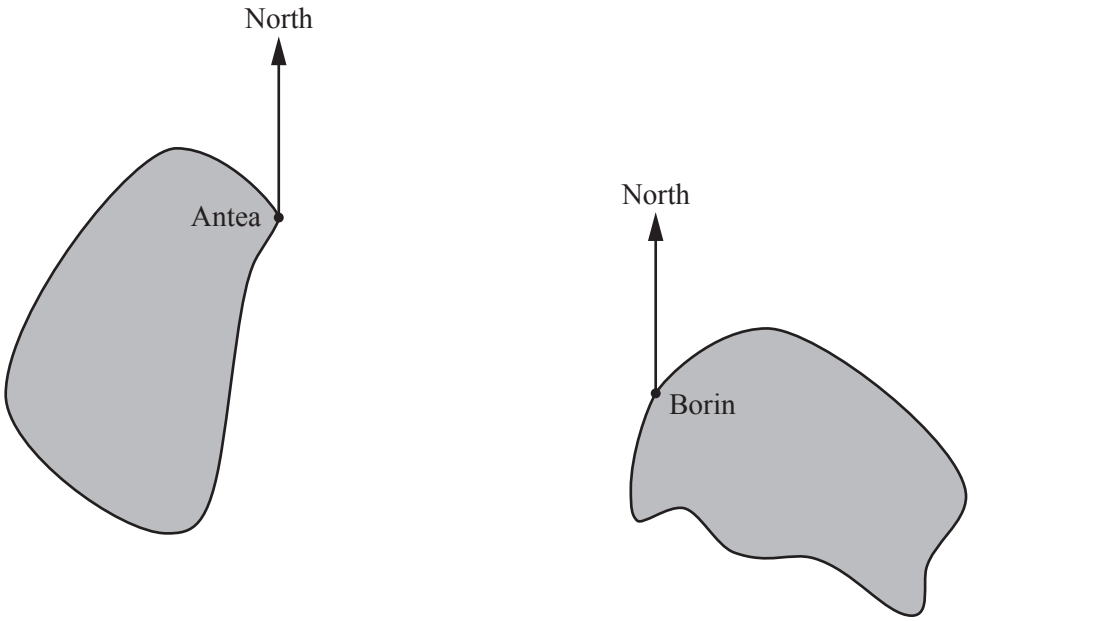
[Turn over

4 This scale drawing shows two towns, Antea and Borin, on two islands.
The scale is 1 cm represents 20 miles.



Scale: 1 cm to 20 miles

(a) Measure the bearing of Borin from Antea.

..... [1]

(b) One day Keron travels by boat from Antea to Borin.
The boat uses 1.2 litres of fuel for every mile travelled.

(i) Work out how much fuel Keron uses to travel from Antea to Borin.

..... litres [4]

(ii) State any assumption you have made in **part (b)(i)**.

.....

..... [1]

(c) The next day, Keron returns by boat from Borin directly to Antea.

What bearing does the boat take?

..... [1]

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[Turn over

5 **(a)** Lily says:

21 is a prime number.

Explain why Lily is not correct.

.....

..... [1]

(b) The **product** of two prime numbers, c and d, is 1345.

Find the value of c and of d.

$c =$ .....

$d =$ ..... [2]

(c) The **sum** of three prime numbers, x, y and z, is 86.
Two of the prime numbers are consecutive odd numbers.

Find the value of x, of y and of z.

$x =$ .....

$y =$ .....

$z =$ ..... [3]

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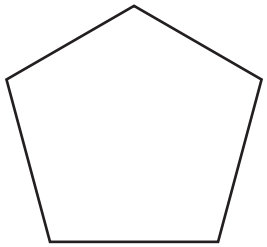
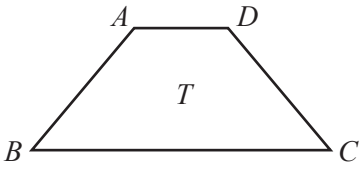
6 **(a)** Show that the interior angle in a regular pentagon is 108°.



NOT TO SCALE

[2]

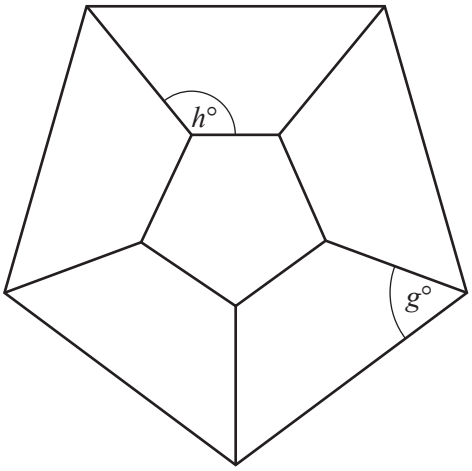
(b)



NOT TO SCALE

Shape T is a trapezium with $AB = DC$.

The shape below is made from five trapeziums each identical to T.



NOT TO SCALE

(i) Work out the value of g.

$g =$ ..... [2]

(ii) Work out the value of h.

$h =$ ..... [2]

7 **(a)** Sam is in charge of a fairground game.

In the game, two fair five-sided spinners, each numbered 1 to 5, are spun together.
The smaller number is subtracted from the larger number to obtain a player's score.

To win the game a player must score 3 or more.

(i) Complete the diagram to show all the possible scores.

Spinner 2

Spinner 1	–	1	2	3	4	5
	1	0	1			
	2	1	0			3
	3	2		0		
	4	3			0	
	5	4				0

[1]

(ii) Alys plays the game once.

Find the probability that Alys wins the game.

..... [2]

(iii) Sam now decides to only let a player win if they score more than 4.

Is this reasonable?
Explain your answer.

..... because .....

..... [1]

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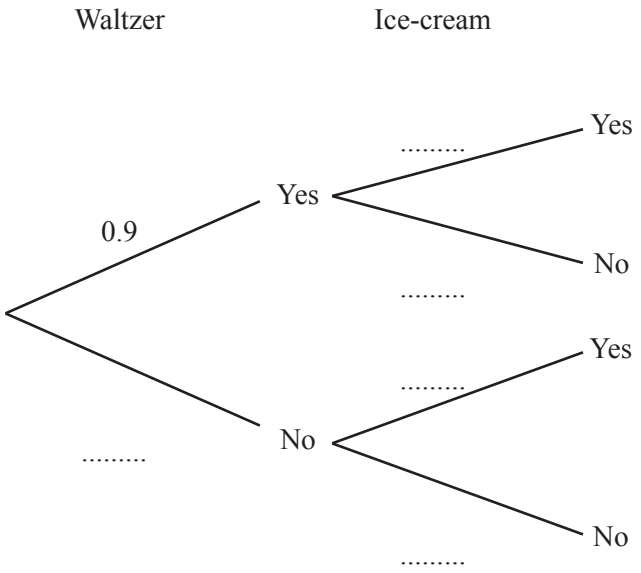
(b) The probability that Alys rides on the Waltzer at the fairground is 0.9.
The probability that she has an ice-cream is 0.8.

(i) Write down the probability that Alys does not have an ice-cream.

..... [1]

(ii) Complete the tree diagram.



[2]

(iii) Work out the probability that Alys rides on the Waltzer and does not have an ice-cream.

..... [2]

8 **(a)** Eva has a piece of Feta cheese that is in the shape of a cuboid measuring 2.5 cm by 6 cm by 4.2 cm.

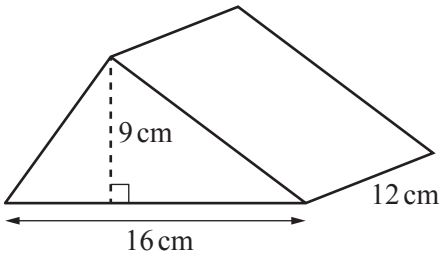
She knows

- 1 cm^3 of the cheese weighs 1.2 g
- 100 g of the cheese contains 260 calories.

How many calories are there in Eva's piece of cheese?

..... calories [4]

(b) Adam has a piece of Cheddar cheese in the shape of a triangular prism.
The diagram shows this piece of cheese.



NOT TO SCALE

Find the volume of Adam's piece of cheese.

..... cm^3 [3]

9 **(a)** Amit saves $\frac{2}{15}$ of his monthly pay.

Each month he saves £250.

Work out his monthly pay.

£ ..... [2]

(b) **(i)** Account A gives compound interest at a rate of 2.5% per year.
Account B gives simple interest at a rate of 2.5% per year.

Elise invests £5000 for 3 years in Account A.
Huw invests £5000 for 3 years in Account B.

Work out how much more money is in Elise's account than in Huw's account at the end of 3 years.
Show your working.

£ ..... [6]

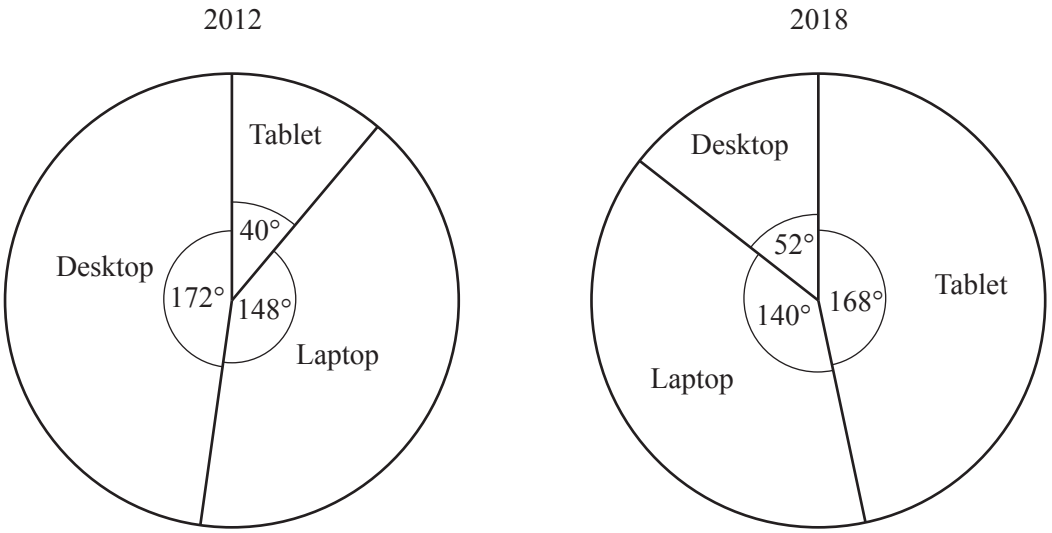
(ii) Explain why an account paying x% compound interest is a better investment than an account paying x% simple interest.

.....

..... [1]

10 A company sells computers.

(a) These pie charts give information about the number of computers sold in 2012 and 2018.



(i) Joe says:

The pie charts show that fewer laptops were sold in 2018 than in 2012.

Without doing any working out, explain why Joe may not be correct.

.....

..... [1]

(ii) The company sold 450 computers altogether in 2012.

How many tablets were sold in 2012?

..... [3]

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(iii) The company sold 294 tablets in 2018.

How many computers were sold altogether in 2018?

..... [3]

(b) The company also sells printers.
In 2012 the company sold 425 printers.
In 2018 the company sold 493 printers.

Work out the percentage increase in sales of printers between 2012 and 2018.

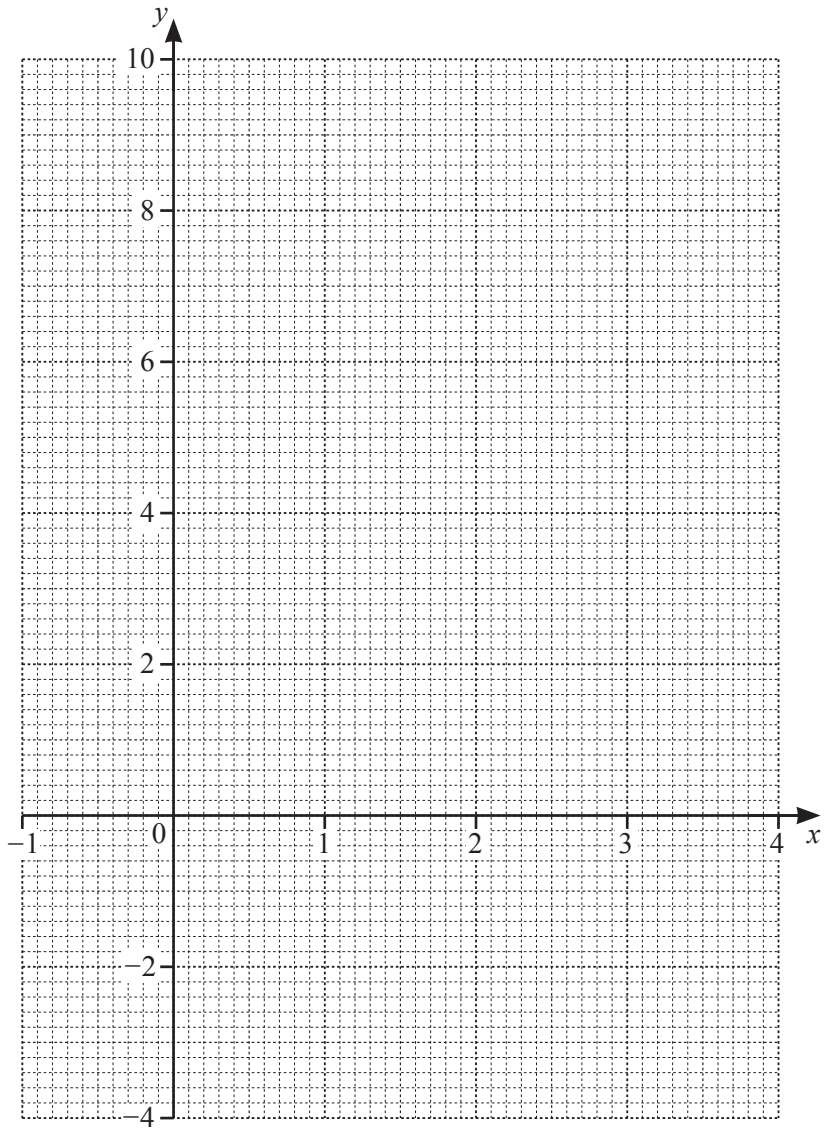
.....% [3]

11 **(a)** Complete the table of values for $y = x^2 - 4x + 3$.

x	-1	0	1	2	3	4
y		3	0		0	3

[2]

(b) On the grid, draw the graph of $y = x^2 - 4x + 3$ for $-1 \leqslant x \leqslant 4$.



[3]

(c) Use your graph to solve $x^2 - 4x + 3 = 1$.

$x =$ ..... or $x =$ ..... [2]

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12 **(a)** Factorise $21x - 35$.

..... [1]

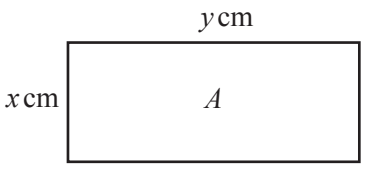
(b) Solve $x^2 + 5x = 0$.

$x =$ ..... or $x =$ ..... [2]

(c) Show that $2x(2x + 3y) - 3(2xy + x^2 + 3) = x^2 - 9$.

[3]

13 Rectangle A has width x cm and length y cm.

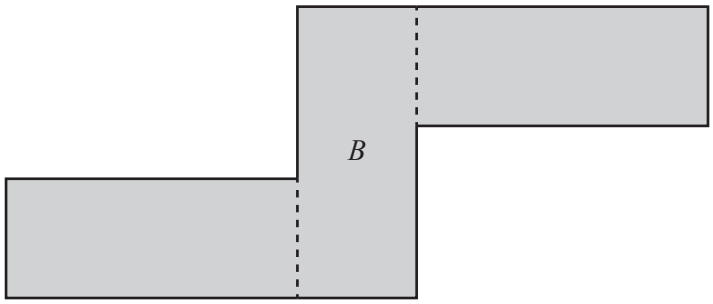


NOT TO SCALE

(a) Write down an algebraic expression, in terms of x and y, for the perimeter of rectangle A.

..... [1]

(b) Shape B is made from three rectangles that are identical to A.



NOT TO SCALE

(i) Write down an algebraic expression, in terms of x and y, for the perimeter of shape B. Simplify your answer.

..... [2]

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(ii) The perimeter of rectangle A is 31 cm.
The perimeter of shape B is 75 cm.

Find the value of x and of y.

$x =$ .....

$y =$ ..... [4]

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