Cambridge IGCSE

Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER				

5923717197

MATHEMATICS **0580/13**

Paper 1 (Core) **October/November 2017**

1 hour

Candidates answer on the Question Paper.

Additional Materials: Electronic calculator
Tracing paper (optional)
Geometrical instruments

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 or graphs.
Do not use staples, paper clips, glue or correction fluid.
DO **NOT** WRITE IN ANY BARCODES.

Answer **all** questions.
If working is needed for any question it must be shown below that question.
Electronic calculators should be used.
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 56.

This document consists of **12** printed pages.

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CAMBRIDGE International Examinations

1 Ahmed drives his car from London to Cambridge.
He leaves London at 07 45 and arrives in Cambridge at 10 17.

Work out the time, in hours and minutes, that he takes to drive from London to Cambridge.

..... h ..... min [1]

2 Work out 16% of $525.

$ ..... [1]

3 A quadrilateral has one line of symmetry and no rotational symmetry.

Write down the name of this quadrilateral.

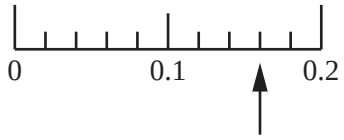
..... [1]

4 Simplify.

$y^4 \times y^5$

.....[1]

5 **(a)**



Write down the number the arrow is pointing to on this scale.

..... [1]

(b) Write these numbers in order of size, starting with the smallest.

0.42 0.06 0.5 0.078

..... < ..... < ..... < .....[1]
smallest

6 A bag contains 16 counters.
3 are red, 6 are blue and the rest are yellow.
Jay takes a counter from the bag at random.

(a) Write down the colour Jay is most likely to take.

..... [1]

(b) Write down the probability that the counter is red.

..... [1]

7 Complete the table.

Fraction		Decimal		Percentage
$\frac{1}{4}$	=		=	25%
	=	0.8	=	

[2]

8 $\mathbf{s} = \begin{pmatrix} 3 \\ -1 \end{pmatrix}$ $\mathbf{t} = \begin{pmatrix} 4 \\ 2 \end{pmatrix}$

Work out $5\mathbf{s} - \mathbf{t}$.

$\begin{pmatrix} \quad \\ \quad \end{pmatrix}$ [2]

9 Solve the equation.

$$5x + 4 = 19 + 2x$$

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

10 By writing each number correct to 1 significant figure, estimate the value of $\dfrac{59.2 \times 1.97}{2.04 + 3.85}$.

..... [2]

11 In a survey of 40 workers, 6 cycle to the office.
The office has a total of 800 workers.

Estimate how many of the 800 workers cycle to the office.

..... [2]

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12 Adilla invests $1200 at a rate of 2.6% per year compound interest.

Calculate the value of her investment at the end of 2 years.

$ ..... [2]

13 The table shows the temperature at midday in some cities on 1st February.

City	Temperature
Berlin	6 °C
Moscow	–10 °C
Stockholm	1 °C
Toronto	0 °C
Warsaw	–2 °C

(a) Write down the city with the lowest temperature.

..... [1]

(b) Work out the difference between the temperature in Berlin and the temperature in Warsaw.

..... °C [1]

(c) The temperature in Minsk was 3 °C higher than the temperature in Moscow.

Work out the temperature in Minsk.

..... °C [1]

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14 The mass, correct to the nearest gram, of each of 20 potatoes is shown below.

85	97	125	100	90	102	116	89	96	104
89	107	106	93	84	118	120	98	112	109

(a) Complete the frequency table.
You may use the tally column to help you.

Mass (g)	Tally	Frequency
80 to 89		
90 to 99		
100 to 109		
110 to 119		
120 to 129		

[2]

(b) Write down the modal group.

..... [1]

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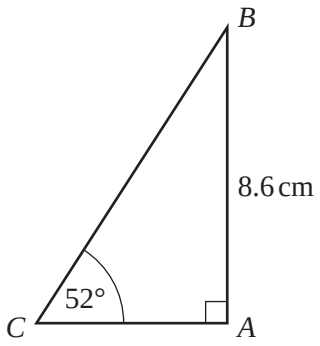
15 Calculate the size of one interior angle of a regular 12-sided polygon.

..... [3]

16 Work out $3\frac{1}{7} - 1\frac{1}{4}$, giving your answer as a mixed number in its lowest terms.
Do not use a calculator and show all the steps of your working.

..... [3]

17



NOT TO SCALE

ABC is a right-angled triangle.

Use trigonometry to calculate *BC*.

BC = ... cm [3]

18 **(a)** Write 1.8×10^4 as an ordinary number.

..... [1]

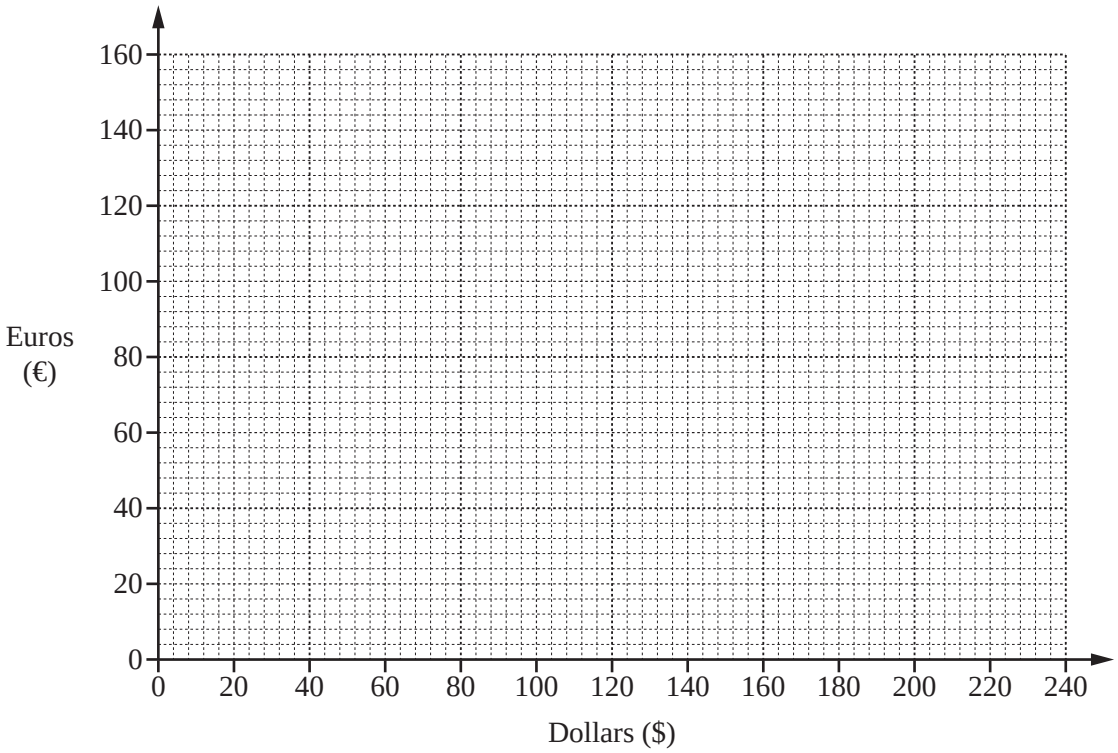
(b) Calculate $(2.9 \times 10^6) - (7.5 \times 10^5)$.
Give your answer in standard form.

..... [2]

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19 Alvin changes some money from dollars ($) to euros (€).
When he changes $100 he receives €60.

(a) On the grid, draw a conversion graph using this information.



[2]

(b) Use your graph to change

(i) $140 to euros,

€ ..... [1]

(ii) €20 to dollars.

$ ..... [1]

20 **(a)** These are the first five terms of a sequence.

4 10 16 22 28

(i) Write down the next term.

..... [1]

(ii) Write down the rule for continuing the sequence.

..... [1]

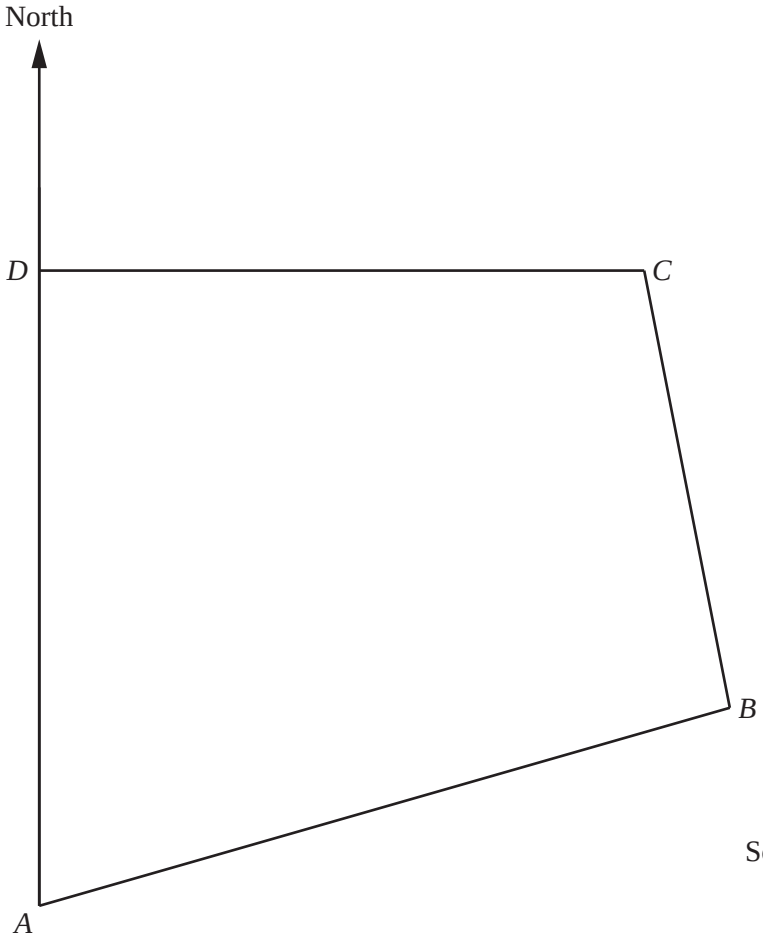
(b) These are the first five terms of a different sequence.

11 14 17 20 23

Find an expression for the nth term of this sequence.

..... [2]

21 The scale drawing shows a park *ABCD*.
The scale is 1 centimetre represents 20 metres.



Scale: 1 cm to 20 m

(a) Find the actual distance *AD*.

..... m [2]

(b) Measure the bearing of *B* from *A*.

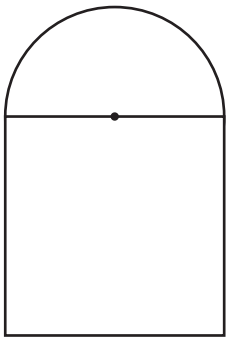
..... [1]

(c) There is a path across the park that is equidistant from *CB* and *CD*.

Using a straight edge and compasses only, construct the position of the path.
Show your construction arcs. [2]

Question 22 is printed on the next page.

22



NOT TO SCALE

The diagram shows a shape made from a square and a semi-circle.

Calculate the area of the shape.
Give the units of your answer.

.... [5]

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