Cambridge IGCSE

Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

CANDIDATE NAME	
CENTRE NUMBER	
CANDIDATE NUMBER	

5727925305

MATHEMATICS **0580/13**

Paper 1 (Core) **May/June 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 **11** printed pages and **1** blank page.

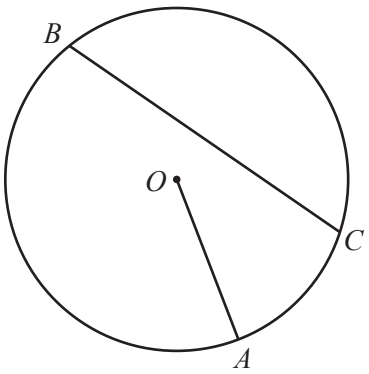
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CAMBRIDGE International Examinations

1 Change \$400 into euros (€) using the exchange rate \$1 = €0.935 .

€ ..... [1]

2



A, *B* and *C* are points on the circumference of a circle, centre *O*.

Write down the mathematical name for

(a) the line *OA*,

..... [1]

(b) the line *BC*.

..... [1]

3 Write 16% as

(a) a decimal,

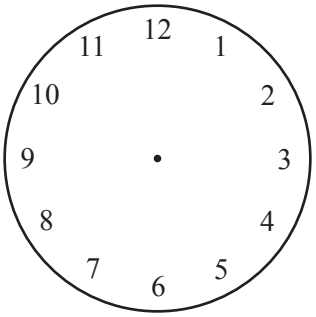
..... [1]

(b) a fraction.

..... [1]

4 Green Lane School ends each day at 3.45 pm.

(a) Show this time on the clock.



[1]

(b) Write 3.45 pm using the 24-hour clock.

.....[1]

5 **(a)** Write 5367 correct to the nearest hundred.

.....[1]

(b) Write 42.3478 correct to 3 decimal places.

.....[1]

6 25 students chose their favourite drink.

The results are listed below.

Tea	Hot chocolate	Coffee	Milkshake	Tea
Hot chocolate	Coffee	Hot chocolate	Hot chocolate	Milkshake
Lemonade	Tea	Milkshake	Milkshake	Lemonade
Coffee	Hot chocolate	Lemonade	Tea	Tea
Hot chocolate	Lemonade	Hot chocolate	Lemonade	Lemonade

Complete the frequency table for the results.
You may use the tally column to help you.

Favourite drink	Tally	Frequency
Tea		
Coffee		
Lemonade		
Milkshake		
Hot chocolate		

[2]

7 **(a)** Write down the next term in this sequence.

24, 22, 18, 12, 4, …

.....[1]

(b) The nth term of another sequence is $3n + 5$.

Write down the first three terms in this sequence.

..... , ... , ... [1]

8 Find the value of

(a) 17^3,

.....[1]

(b) $\sqrt[3]{729}$.

.....[1]

9 Factorise completely.

$4x^2 - 8xy$

.....[2]

10 Line l has the equation $y = 4x - 6$.

(a) Write down the co-ordinates of the point where line l crosses the y-axis.

(..... , ...) [1]

(b) Write down the gradient of line l.

.....[1]

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11 Complete these calculations to make them correct.

(a) $\frac{24+8}{4} =$ .....

[1]

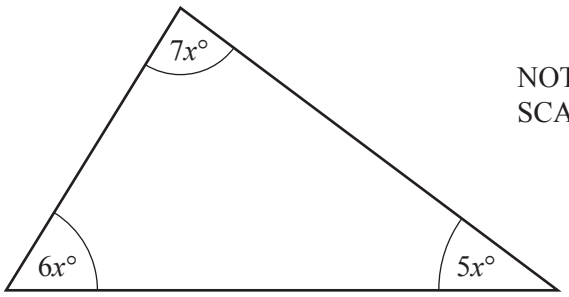
(b) $-18 \div$ ..... $= 2$

[1]

(c) $\frac{7}{8} \times \frac{\text{.....}}{\text{.....}} = \frac{21}{40}$

[1]

12 The three angles in a triangle are $5x°$, $6x°$ and $7x°$.



NOT TO SCALE

(a) Find the value of x.

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

(b) Work out the size of the largest angle in the triangle.

.....[1]

13 **(a)** $\overrightarrow{GH} = \begin{pmatrix} 6 \\ -4 \end{pmatrix}$

Find

(i) $5\overrightarrow{GH}$,

$\begin{pmatrix} \quad \\ \quad \end{pmatrix}$ [1]

(ii) $\overrightarrow{HG}$.

$\begin{pmatrix} \quad \\ \quad \end{pmatrix}$ [1]

(b) $\begin{pmatrix} 6 \\ 7 \end{pmatrix} + \begin{pmatrix} 2 \\ y \end{pmatrix} = \begin{pmatrix} 8 \\ 3 \end{pmatrix}$

Find the value of y.

$y =$ ..... [1]

14 These are the weights, in kilograms, of 10 babies.

3.7 2.7 3.5 3.8 3.1 3.0 3.8 2.8 4.1 3.7

(a) Find the range.

..... kg [1]

(b) Calculate the mean.

..... kg [2]

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15 **(a)** Write down a prime number between 80 and 90.

.....[1]

(b) Find the lowest common multiple (LCM) of 21 and 30.

.....[2]

16 **(a)** $5^x \div 25 = 5^6$

Find the value of x.

$x =$ .....[1]

(b) Solve the simultaneous equations.
You must show all your working.

$$2x + 3y = 16$$
$$-2x + 5y = 24$$

$x =$ .....

$y =$ .....[2]

17 \$600 is invested for 3 years at a rate of 2.5% per year compound interest.

Calculate the total value of the investment at the end of the 3 years.

\$ ..... [3]

18 **Without using your calculator**, work out $\frac{11}{12} - \left(\frac{3}{4} - \frac{2}{3}\right)$.

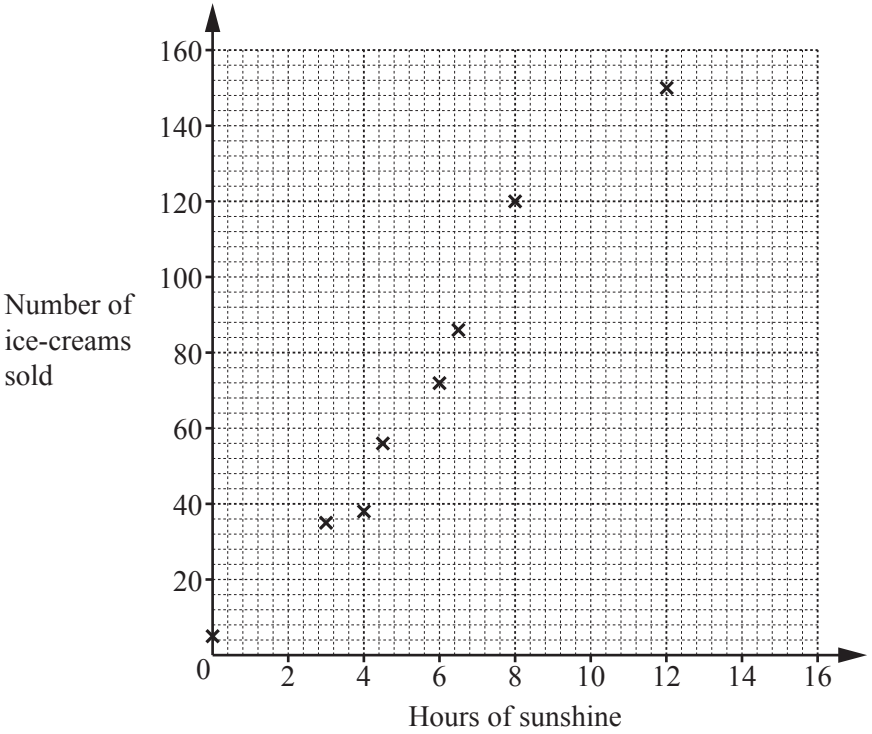
You must show all your working and give your answer as a fraction in its simplest form.

..... [4]

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19 A café owner records the number of hours of sunshine and the number of ice-creams sold for 10 days. The results are shown in the table.

Day	1	2	3	4	5	6	7	8	9	10
Hours of sunshine	12	0	3	6.5	6	4.5	4	8	10	5
Number of ice-creams sold	150	5	35	86	72	56	38	120	127	74



(a) Complete the scatter diagram.
The first 8 points have been plotted for you. [1]

(b) What type of correlation is shown on the scatter diagram?

.....[1]

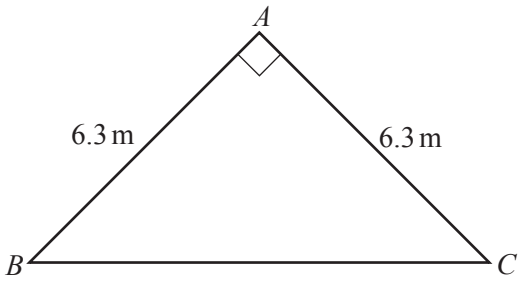
(c) On the scatter diagram, draw a line of best fit. [1]

(d) The weather forecast predicts 7 hours of sunshine for tomorrow.

Use your line of best fit to estimate the number of ice-creams that will be sold tomorrow.

.....[1]

20 (a)

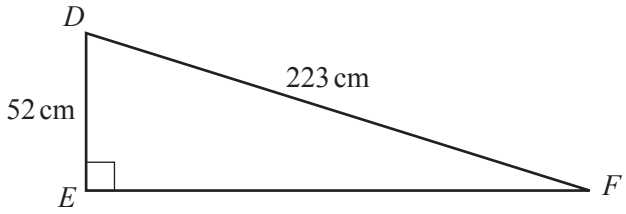


NOT TO SCALE

Calculate the length *BC*.

BC = ... m [2]

(b)



NOT TO SCALE

Calculate angle *DFE*.

Angle *DFE* = ...[2]

21 Simplify.

(a) $6w^0$

.....[1]

(b) $5x^3 - 3x^3$

.....[1]

(c) $3y^6 \times 5y^{-2}$

.....[2]

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