Cambridge IGCSE

Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER				

5903439311

MATHEMATICS **0580/11**

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 **10** printed pages and **2** blank pages.

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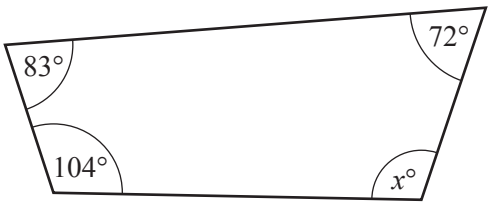
1



NOT TO SCALE

The diagram shows a quadrilateral.

Find the value of x.

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

2 A watch costs \$80.
The exchange rate is \$1 = 124.3 Japanese Yen.

Work out the cost of the watch in Yen.

..... Yen [1]

3 Work out.

$2^{-4} \times 2^{5}$

..... [1]

4 Amber's mean mark on five tests is 80.
Her marks on four of these tests are 68, 81, 74 and 89.

Work out her mark on the fifth test.

..... [2]

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5 Write 18.766 correct to

(a) 1 decimal place,

..... [1]

(b) 2 significant figures.

..... [1]

6 Calculate. $\sqrt{2+\frac{0.2}{1.7-0.9}}$

..... [2]

7 Factorise completely.

$$12x^2+15xy-9x$$

..... [2]

8 The time, t seconds, that Jade takes to run a race is 14.3 seconds, correct to 1 decimal place.

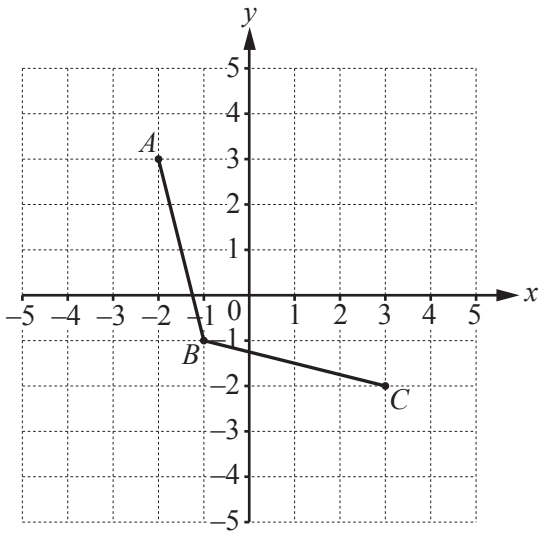
Complete this statement about the value of t.

..... $\leqslant t <$ ..... [2]

9 Calculate the area of a circle with diameter 9 cm.

..... cm^2 [2]

10



The diagram shows two sides of a rhombus *ABCD*.

(a) Write down the co-ordinates of *A*.

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

(b) Complete the rhombus *ABCD* on the grid. [1]

11 **(a)** Write the fraction $\frac{30}{54}$ in its lowest terms.

..... [1]

(b) Complete this table.

Fraction	Decimal	Percentage
$\frac{9}{100}$	=	= .....

[2]

12 **Without using a calculator**, work out $1\frac{2}{3} - \frac{11}{15}$.
Write down all the steps of your working and give your answer as a fraction in its lowest terms.

..... [3]

13 $\sqrt{5}$ $\quad -7 \quad$ 343 $\quad -11 \quad$ 0.4 $\quad$ 2.5 $\quad \frac{1}{3}$

From this list of numbers, write down

(a) a cube number,

..... [1]

(b) the smallest number,

..... [1]

(c) a natural number.

..... [1]

14 Work out.

(a) $\begin{pmatrix} 3 \\ 2 \end{pmatrix} + \begin{pmatrix} -1 \\ 5 \end{pmatrix}$

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

(b) $\begin{pmatrix} 6 \\ 3 \end{pmatrix} - \begin{pmatrix} 4 \\ -2 \end{pmatrix}$

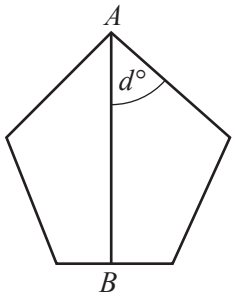
$\begin{pmatrix} \quad \\ \quad \end{pmatrix}$ [1]

(c) $4\begin{pmatrix} 2 \\ 5 \end{pmatrix}$

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

15 The diagram shows a regular pentagon.
AB is a line of symmetry.

Work out the value of *d*.



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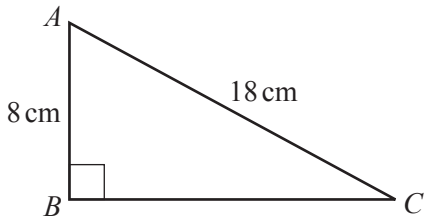
d = ... [3]

16



NOT TO SCALE

Calculate the length of *BC*.

BC = ... cm [3]

17 Simplify.

(a) $(m^5)^2$

..... [1]

(b) $4x^3y \times 5x^2y$

..... [2]

18 Solve the simultaneous equations.
You must show all your working.

$$3x + 4y = 6$$
$$6x - y = -15$$

$x =$ .....

$y =$ ..... [3]

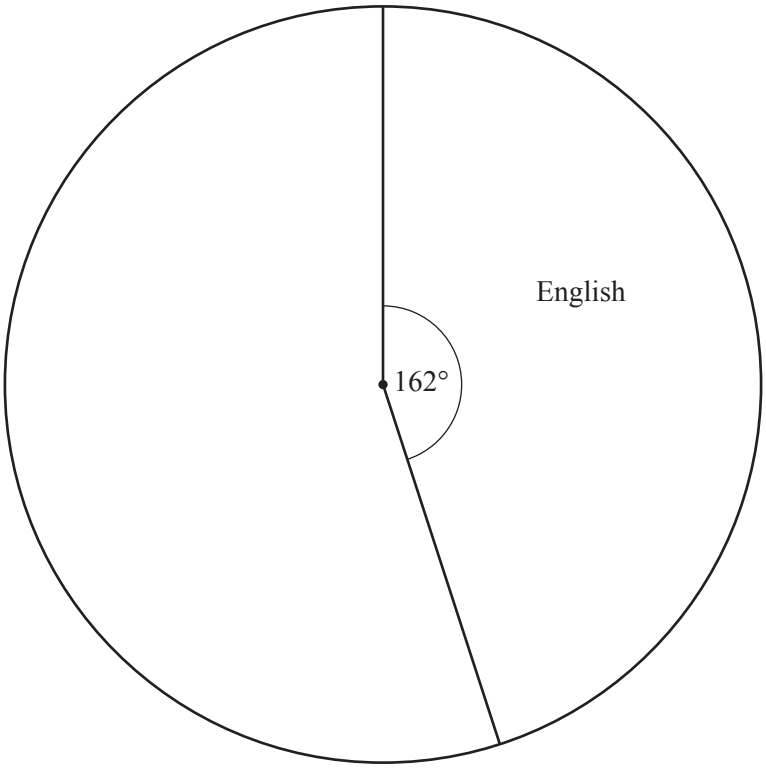
19 **(a)** Juan asks 40 people which language they speak at home.
The table shows the results.

Language	Frequency	Pie chart sector angle
English	18	162°
French	11	
Spanish	7	
Other	4	

Juan wants to draw a pie chart to show this information.

(i) Complete the table. [3]

(ii) Complete the pie chart.



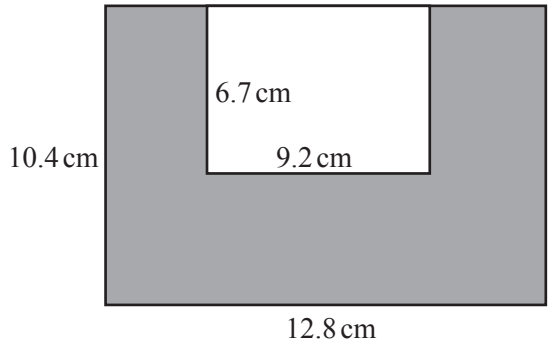
[1]

(b) Mansoor also asks some people which language they speak at home.
In Mansoor's pie chart, the sector angle for Portuguese is 108°.

Write down the fraction of these people who do **not** speak Portuguese at home.

..... [1]

20 (a)



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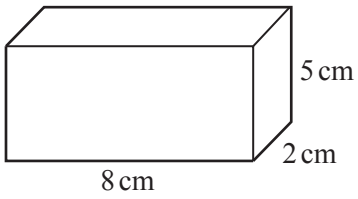
The diagram shows a small rectangle inside a large rectangle.

Work out the shaded area.

..... cm^2 [2]

(b)

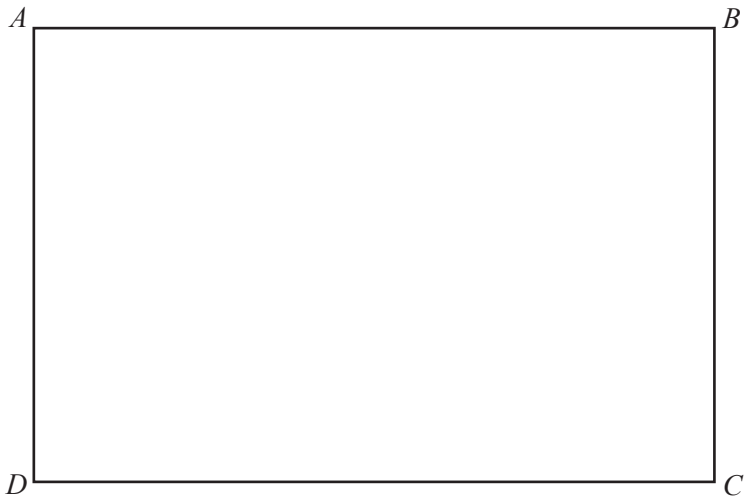


NOT TO SCALE

Work out the surface area of this cuboid.

..... cm^2 [3]

21 The diagram shows a rectangle $ABCD$.



(a) In this part, use a straight edge and compasses only and show your construction arcs.

Construct

(i) the bisector of angle DCB, [2]

(ii) the perpendicular bisector of DC. [2]

(b) Shade the region containing the points inside the rectangle that are

- nearer to D than to C

and

- nearer to BC than to DC. [1]

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