Cambridge
IGCSE

## Cambridge International Examinations

Cambridge International General Certificate of Secondary Education

## CANDIDATE

 NAMECENTRE NUMBER


## 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 $\pi$, 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 .


NOT TO
SCALE

The diagram shows a quadrilateral.

Find the value of $x$.

$$
\begin{equation*}
x= \tag{1}
\end{equation*}
$$

2 A watch costs $\$ 80$.
The exchange rate is $\$ 1=124.3$ Japanese Yen.
Work out the cost of the watch in Yen.

3 Work out.

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

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.

5 Write 18.766 correct to
(a) 1 decimal place,
(b) 2 significant figures.

6 Calculate.

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

7 Factorise completely.

$$
12 x^{2}+15 x y-9 x
$$

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 $t$.
$\qquad$

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


The diagram shows two sides of a rhombus $A B C D$.
(a) Write down the co-ordinates of $A$.
$\qquad$
(b) Complete the rhombus $A B C D$ on the grid.

11 (a) Write the fraction $\frac{30}{54}$ in its lowest terms.
(b) Complete this table.

| Fraction | Decimal | Percentage |
| :---: | :---: | :---: |
| $\frac{9}{100}$ | $=\ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots$. | $=\ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots$ |

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.

13 $\begin{array}{lllllll}\sqrt{5} & -7 & 343 & -11 & 0.4 & 2.5 & \frac{1}{3}\end{array}$

From this list of numbers, write down
(a) a cube number,
$\qquad$
(b) the smallest number,
(c) a natural number.

14 Work out.
(a) $\binom{3}{2}+\binom{-1}{5}$
(b) $\binom{6}{3}-\binom{4}{-2}$
(c) $4\binom{2}{5}$

15 The diagram shows a regular pentagon.
$A B$ is a line of symmetry.
Work out the value of $d$.


NOT TO SCALE

$$
\begin{equation*}
d= \tag{3}
\end{equation*}
$$

16


NOT TO SCALE

Calculate the length of $B C$.

17 Simplify.
(a) $\left(m^{5}\right)^{2}$
$\qquad$
(b) $4 x^{3} y \times 5 x^{2} y$

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

$$
\begin{aligned}
3 x+4 y & =6 \\
6 x-y & =-15
\end{aligned}
$$

$x=$
$y=$[3]

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

| Language | Frequency | Pie chart <br> sector angle |
| :---: | :---: | :---: |
| English | 18 | $162^{\circ}$ |
| French | 11 |  |
| Spanish | 7 |  |
| Other | 4 |  |

Juan wants to draw a pie chart to show this information.
(i) Complete the table.
(ii) Complete the pie chart.

(b) Mansoor also asks some people which language they speak at home.

In Mansoor's pie chart, the sector angle for Portuguese is $108^{\circ}$.
Write down the fraction of these people who do not speak Portuguese at home.

20 (a)


NOT TO
SCALE

The diagram shows a small rectangle inside a large rectangle.

Work out the shaded area.
$\qquad$
$\mathrm{cm}^{2}$ [2]
(b)


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SCALE

Work out the surface area of this cuboid.

21 The diagram shows a rectangle $A B C D$.

(a) In this part, use a straight edge and compasses only and show your construction arcs. Construct
(i) the bisector of angle $D C B$,
(ii) the perpendicular bisector of $D C$.
(b) Shade the region containing the points inside the rectangle that are

- nearer to $D$ than to $C$
and
- nearer to $B C$ than to $D C$.

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