Cambridge Assessment International Education

# Cambridge IGCSE™

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| CANDIDATE NAME | | | | | | | | | |
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*4045934305*

**CAMBRIDGE INTERNATIONAL MATHEMATICS** **0607/22**

Paper 2 (Extended) **February/March 2021**

**45 minutes**

You must answer on the question paper.

You will need: Geometrical instruments

**INSTRUCTIONS**

- Answer **all** questions.
- Use a black or dark blue pen. You may use an HB pencil for any diagrams or graphs.
- Write your name, centre number and candidate number in the boxes at the top of the page.
- Write your answer to each question in the space provided.
- Do **not** use an erasable pen or correction fluid.
- Do **not** write on any bar codes.
- Calculators must **not** be used in this paper.
- You may use tracing paper.
- You must show all necessary working clearly and you will be given marks for correct methods even if your answer is incorrect.
- All answers should be given in their simplest form.

**INFORMATION**

- The total mark for this paper is 40.
- The number of marks for each question or part question is shown in brackets [ ].

This document has **8** pages.




**[Turn over**

## Formula List

For the equation $ax^2 + bx + c = 0$ $\quad x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Curved surface area, $A$, of cylinder of radius $r$, height $h$. $\quad A = 2\pi rh$

Curved surface area, $A$, of cone of radius $r$, sloping edge $l$. $\quad A = \pi rl$

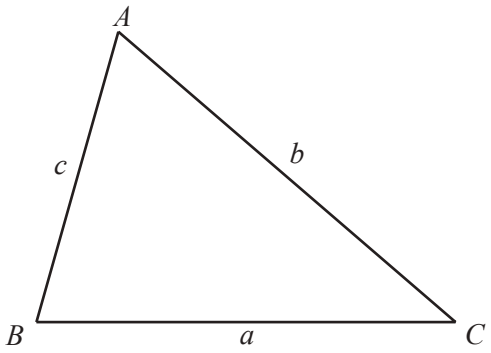
Curved surface area, $A$, of sphere of radius $r$. $\quad A = 4\pi r^2$

Volume, $V$, of pyramid, base area $A$, height $h$. $\quad V = \frac{1}{3}Ah$

Volume, $V$, of cylinder of radius $r$, height $h$. $\quad V = \pi r^2 h$

Volume, $V$, of cone of radius $r$, height $h$. $\quad V = \frac{1}{3}\pi r^2 h$

Volume, $V$, of sphere of radius $r$. $\quad V = \frac{4}{3}\pi r^3$




$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$

$$a^2 = b^2 + c^2 - 2bc\cos A$$

$$\text{Area} = \frac{1}{2}bc\sin A$$

Answer **all** the questions.

**1** These are the test results for 14 students.

27 19 22 25 18 23 24

17 16 25 17 27 23 26

**(a)** Construct an ordered stem-and-leaf diagram to show this information, including a key.

Key: ..... | ..... = ..... [3]

**(b)** Find the median.

..... [1]

**2** Point $A$ (7, 5) is translated to point $B$ (2, 2).

Find the vector that represents this translation.

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

**3** Find the highest common factor (HCF) of 84 and 72.

..... [1]

**4** Solve.

$|x| + 2 = 7$

..... [1]

**5** Point $A$ has coordinates $(-3, 2)$.
Point $B$ has coordinates $(5, -4)$.

**(a)** Find the mid-point of $AB$.

( ..... , ..... ) [2]

**(b)** Find the length of $AB$.

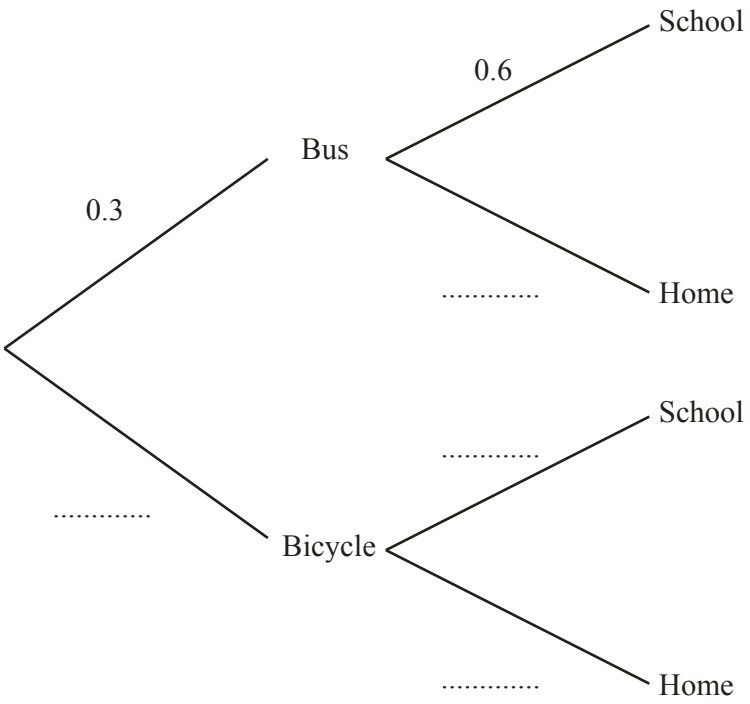
..... [3]

**6** Find the value of $p$ when $2^6 \div 4^p = 2^7$.

$p =$ ..... [3]

**7** Iraj travels to school either by bus or on a bicycle.
The probability that he goes by bus is 0.3 .
He can have lunch at home or at school.
The probability that he has lunch at school is 0.6 .

**(a)** Complete the tree diagram.




[2]

**(b)** Find the probability that Iraj travels on a bicycle to school and goes home for lunch.

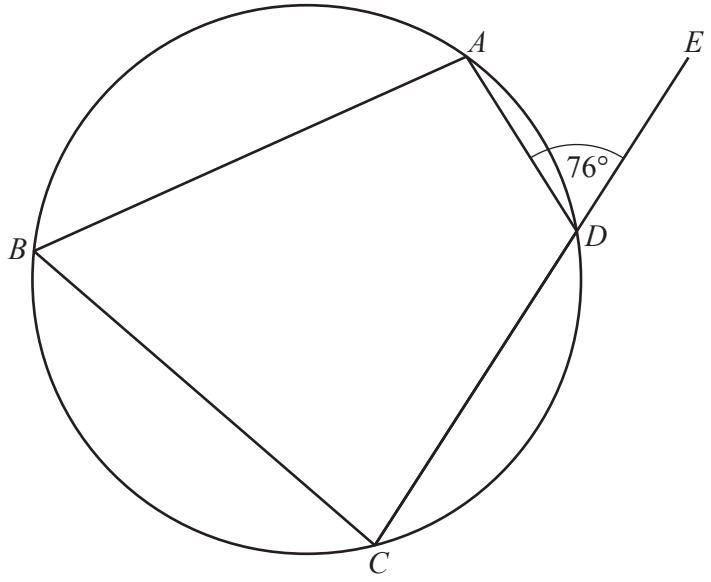
..... [2]

**8** Expand and simplify.

$$4(2a+5b)-3(6b-3a)$$

..... [2]

**9 (a)**



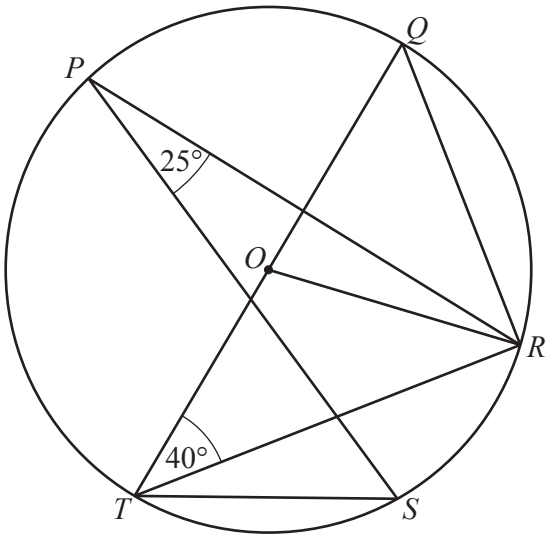

NOT TO SCALE

$A$, $B$, $C$, and $D$ are points on a circle.
$CDE$ is a straight line.

Find angle $ABC$ .

Angle $ABC$ = ..... [1]

**(b)**




NOT TO SCALE

$P$, $Q$, $R$, $S$ and $T$ are points on the circle centre $O$.
$TOQ$ is a straight line.

**(i)** Find angle $STR$.

Angle $STR$ = ..... [1]

**(ii)** Find angle $QOR$.

Angle $QOR$ = ..... [1]

**10** Aisha picks three number cards from a pack.
The mean of the three numbers is $6\frac{1}{3}$.

She picks another card from the pack.
The mean of the four numbers is $6\frac{1}{2}$.

Work out the number on the fourth card.

..... [3]

**11** Find the next term and an expression for the $n$th term of this sequence.

35, 29, 19, 5, …

next term = .....

$n$th term = ..... [3]

**12** Rearrange this formula to make $x$ the subject.

$$y = \frac{a-x}{3x}$$

$x$ = ..... [3]

**Questions 13 and 14 are printed on the next page.**

**13** Rationalise the denominator and simplify.

$$\frac{2}{\sqrt{5}+1}$$

..... [3]

**14** Write as a single fraction in its simplest form.

$$\frac{3a}{a+4} - \frac{a-1}{2a}$$

..... [3]