Cambridge IGCSE

Cambridge Assessment International Education
Cambridge International General Certificate of Secondary Education

CANDIDATE NAME

CENTRE NUMBER

CANDIDATE NUMBER

2002671041

CAMBRIDGE INTERNATIONAL MATHEMATICS **0607/22**

Paper 2 (Extended) **May/June 2019**

45 minutes

Candidates answer on the Question Paper.

Additional Materials: 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.
Do not use staples, paper clips, glue or correction fluid.
You may use an HB pencil for any diagrams or graphs.
DO **NOT** WRITE IN ANY BARCODES.

Answer **all** the questions.
CALCULATORS MUST NOT BE USED IN THIS PAPER.
All answers should be given in their simplest form.
You must show all the relevant working to gain full marks and you will be given marks for correct methods even if your answer is incorrect.
The number of marks is given in brackets [ ] at the end of each question or part question.
The total number of marks for this paper is 40.

This document consists of **8** printed pages.

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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. $\quad A = \pi rl$

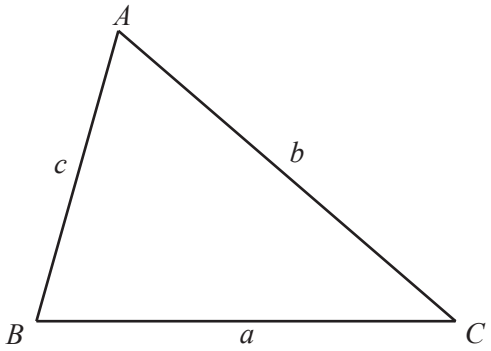
Curved surface area, A, of sphere of radius r. $\quad A = 4\pi r^2$

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. $\quad V = \frac{4}{3}\pi r^3$



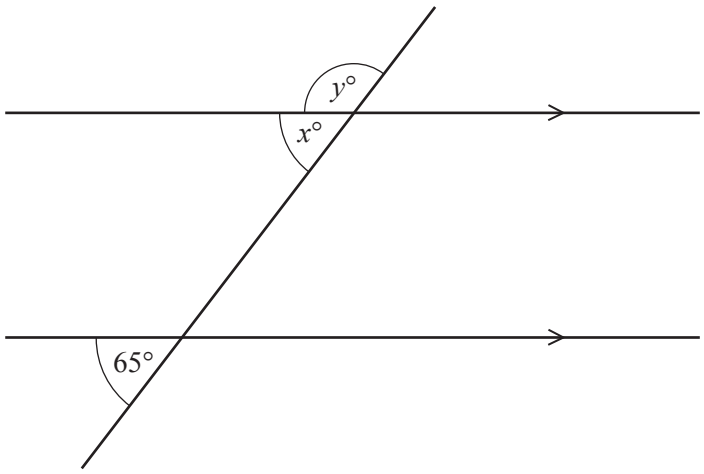
$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$

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

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

Answer **all** the questions.

1



NOT TO SCALE

Find the value of x and the value of y.

$x =$ .....

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

2 A regular polygon has 40 sides.

Find the size of one exterior angle.

..... [2]

3 A is the point (1, 5) and B is the point (6, 2).

Find the column vector $\overrightarrow{AB}$.

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

4 $t = 3p^2$

(a) Find the value of t when $p = 4$.

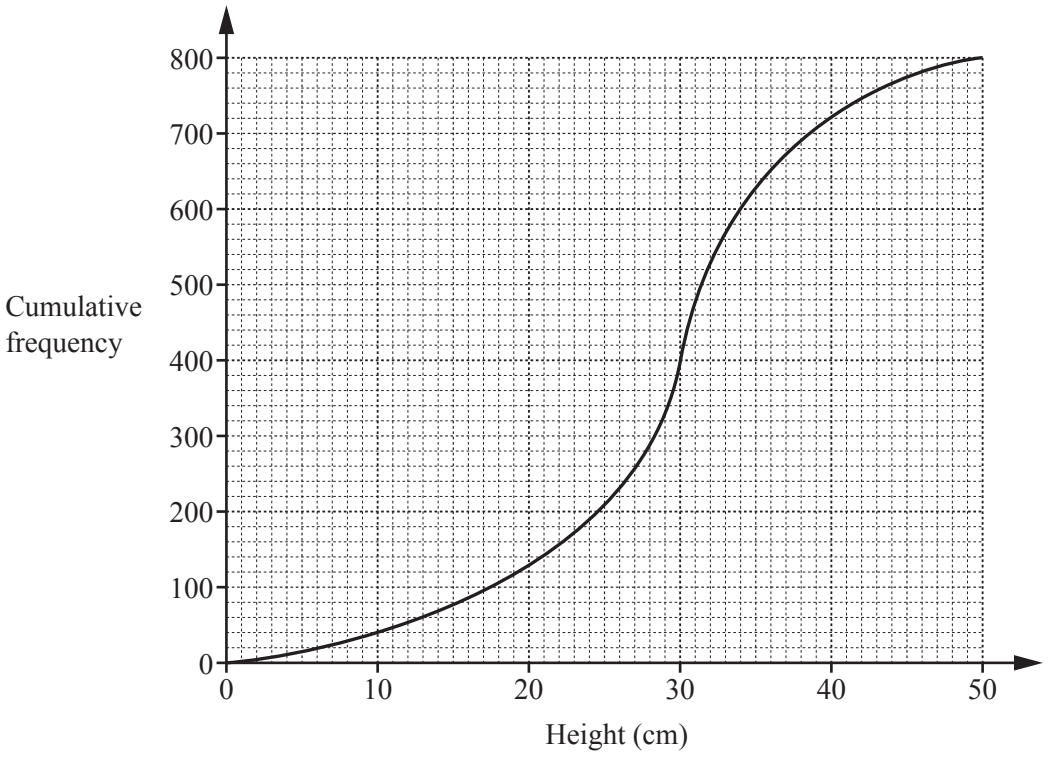
$t =$ ..... [1]

(b) Re-arrange the formula to write p in terms of t.

$p =$ ..... [2]

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5



The cumulative frequency curve shows some information about the heights of 800 plants.

Find

(a) the median,

..... cm [1]

(b) the upper quartile.

..... cm [1]

6 Work out $\frac{4}{5} \div 1\frac{1}{2}$.

..... [2]

7 A car travels 85 km in 50 minutes.

Find the average speed of the car, giving your answer in km/h.

..... km/h [2]

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8 Solve the simultaneous equations.

$$a + b = 16$$
$$2a - b = 17$$

$a =$ .....

$b =$ ..... [2]

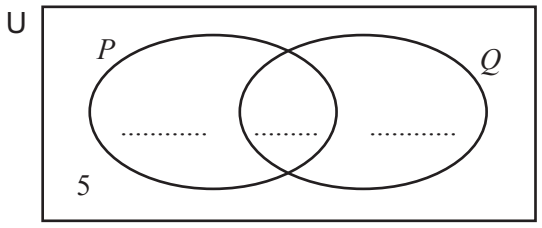
9 Find the equation of the line parallel to the line $y = 3 - x$ that passes through the point (0, 7).

..... [2]

10 Work out the value of $\left(\frac{1}{27}\right)^{-\frac{1}{3}}$.

..... [1]

11



$n(U) = 25$ $n(P) = 10$ $n(Q) = 17$ $n(P \cup Q)' = 5$

Complete the Venn diagram.

[2]

12 Factorise completely.

$$ab - a - b + 1$$

..... [2]

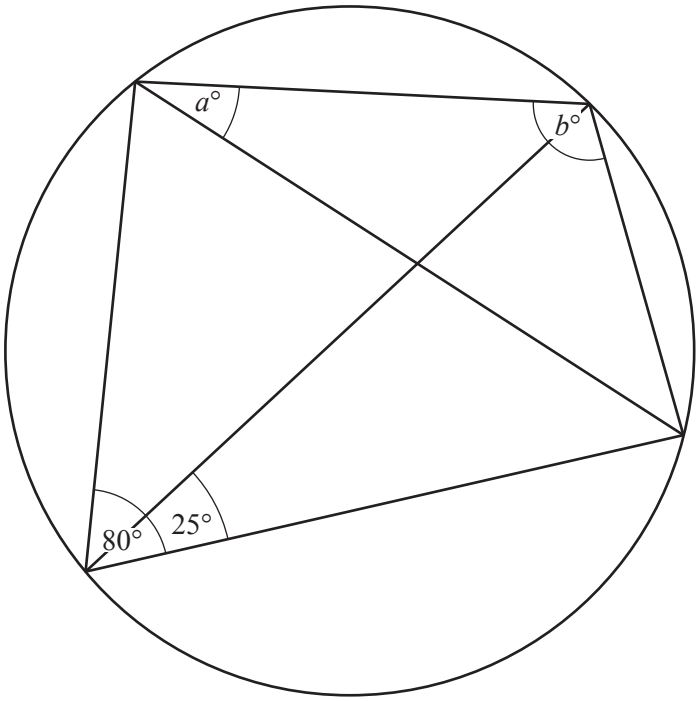
13 Work out $1.1 \times 10^{30} + 1.1 \times 10^{29}$, giving your answer in standard form.

..... [2]

14 Find the highest common factor (HCF) of $8p^4q^8$ and $4p^3q^{10}$.

..... [2]

15



NOT TO SCALE

The diagram shows a cyclic quadrilateral.

Find the value of a and the value of b.

$a =$ .....

$b =$ ..... [2]

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16 Rationalise the denominator.

$$\frac{1}{\sqrt{5}-1}$$

..... [2]

17 y is inversely proportional to $\sqrt{x+4}$.
When $x = 5$, $y = 12$.

Find y in terms of x.

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

18 Simplify.

$$\frac{y^2-9}{xy+3x}$$

..... [3]

Question 19 is printed on the next page.

19 **(a)** $2\log x = 3\log 4$

Find the value of x.

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

(b) $\log x + \log u - \log v = \log p$

Find p in terms of x, u and v.

$p =$ ..... [1]

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