Cambridge IGCSE

Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER				

* 4 4 9 3 0 4 2 7 2 0 *

CAMBRIDGE INTERNATIONAL MATHEMATICS **0607/23**

Paper 2 (Extended) **October/November 2017**

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.

© UCLES 2017

CAMBRIDGE International Examinations

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. $\quad A = \pi rl$

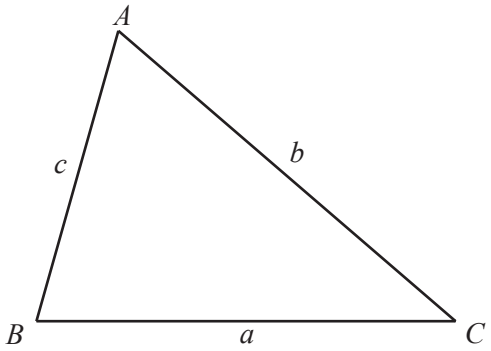
Curved surface area, A, of sphere of radius r. $\quad A = 4\pi r^2$

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 27 39 49 51 53 55 58

From this list write down the prime number.

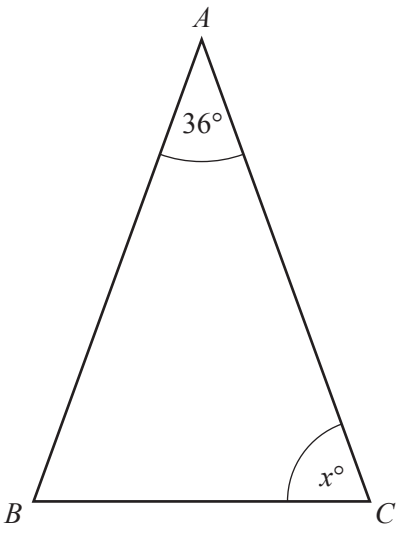
..... [1]

2 A is the point (1, 3) and B is the point (4, 9).

Find $\overrightarrow{AB}$.

$\overrightarrow{AB} = \begin{pmatrix} \quad \\ \quad \end{pmatrix}$ [2]

3



NOT TO SCALE

$AB = AC$.

Find the value of x.

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

4 $144 is shared in the ratio 1 : 7.

Find the value of the smaller share.

$ ..... [2]

5 Ciara buys 6 red pens and 4 blue pens for a total cost of $3.90 .
Blue pens cost $0.45 each.

Find the cost of one red pen.

$ ..... [3]

6 Write each number in standard form.

(a) 58 000

..... [1]

(b) 0.008 09

..... [1]

© UCLES 2017

7 The interior angle of a regular polygon is 160°.

Find the number of sides of this polygon.

..... [3]

8 Solve the equation.

$$45 - \frac{90}{x} = 15$$

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

9 The mean of two numbers is 46.
The difference between the two numbers is 12.

Find the two numbers.

..... and ..... [2]

10 Solve the equation.

$$x^2 - 5x - 24 = 0$$

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

11 Rationalise the denominator and simplify your answer.

$$\frac{32}{\sqrt{8}}$$

..... [2]

12 The volume of a sphere is $\frac{32}{3}\pi$ cm^3.

Find the radius of the sphere.

..... cm [2]

© UCLES 2017

13 A is the point (1, 8) and B is the point (5, 0).

Find the equation of the perpendicular bisector of AB in the form $y = mx + c$.

$y =$ ..... [4]

14 Rearrange the formula to make x the subject.

$$A = \frac{3x}{2x - 5}$$

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

Questions 15 and 16 are printed on the next page.

15 Factorise completely.

$$5x^2 - 125y^2$$

..... [3]

16 The probability that it rains today is 0.3 .
If it rains today, the probability that it will rain tomorrow is 0.4 .
If it does not rain today, the probability that it will rain tomorrow is 0.15 .

Find the probability that it will rain tomorrow.

..... [3]

Permission to reproduce items where third-party owned material protected by copyright is included has been sought and cleared where possible. Every reasonable effort has been made by the publisher (UCLES) to trace copyright holders, but if any items requiring clearance have unwittingly been included, the publisher will be pleased to make amends at the earliest possible opportunity.

To avoid the issue of disclosure of answer-related information to candidates, all copyright acknowledgements are reproduced online in the Cambridge International Examinations Copyright Acknowledgements Booklet. This is produced for each series of examinations and is freely available to download at www.cie.org.uk after the live examination series.

Cambridge International Examinations is part of the Cambridge Assessment Group. Cambridge Assessment is the brand name of University of Cambridge Local Examinations Syndicate (UCLES), which is itself a department of the University of Cambridge.