Cambridge Assessment International Education

Cambridge IGCSE™

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8904149492

CAMBRIDGE INTERNATIONAL MATHEMATICS **0607/23**

Paper 2 (Extended) **October/November 2020**

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. Blank pages are indicated.

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[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. $\quad A = \pi rl$

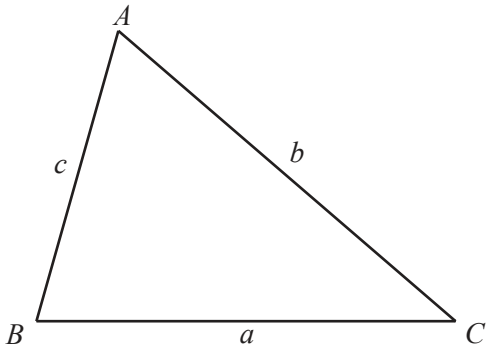
Curved surface area, A, of sphere of radius r. $\quad A = 4\pi r^2$

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 Work out $(0.2)^3$.

..... [1]

2 Solve the equation.

$$2x - 7 = -3$$

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

3 Work out $\frac{5}{6} \div \frac{15}{16}$.

Give your answer as a fraction in its lowest terms.

..... [2]

4 Find the integer values of x when $-1 \leqslant x < 3$.

..... [2]

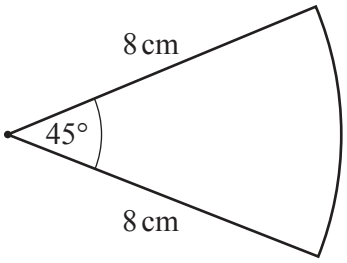
5 Solve the simultaneous equations.

$$2p - 3q = 7$$
$$p + 3q = 2$$

$p =$ .....

$q =$ ..... [2]

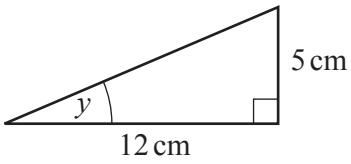
6 Find the area of the sector.
Give your answer, in terms of π, in its simplest form.



NOT TO SCALE

..... cm^2 [2]

7 Find, as a fraction, the value of $\sin y$.



NOT TO SCALE

$\sin y =$ ..... [3]

8 Find the value of

(a) $\left(\frac{1}{2}\right)^{-3}$,

..... [1]

(b) $\log_5 125$.

..... [1]

9 Simplify $4x^4 \times 5x^5$.

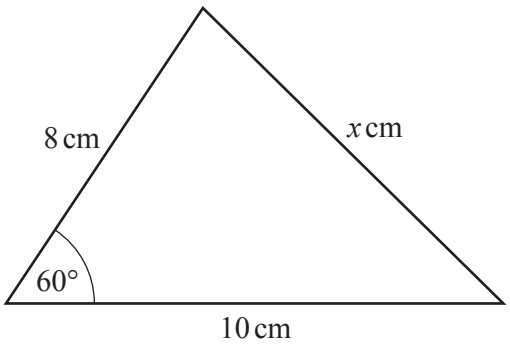
..... [2]

10 $J = m(k^2 + h^2)$

Rearrange the formula to make h the subject.

$h =$ ..... [3]

11

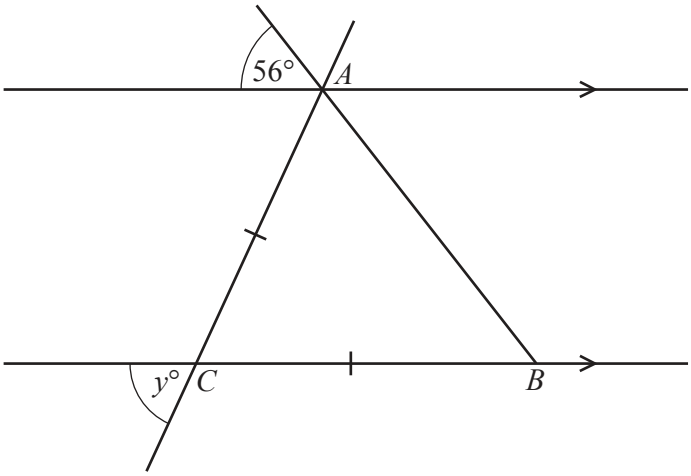


NOT TO SCALE

Find the value of x^2.

$x^2 =$ ..... [3]

12



NOT TO SCALE

In the diagram, A, B and C are points on parallel lines.
$AC = BC$.

Work out the value of y.

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

13 $\left(2\sqrt{3} - 3\sqrt{2}\right)^2 = p + q\sqrt{6}$

Find the value of p and the value of q.

$p =$ .....

$q =$ ..... [3]

14 y varies inversely as $(x-3)^2$.
When $x = 1$, $y = 4$.

Find y in terms of x.

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

15 $\log x = 2\log 3 - 5\log 2$

Find the value of x.

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

16 α is acute and $\tan\alpha = x$.

Find, in terms of x,

(a) $\tan(180-\alpha)$,

$\tan(180-\alpha) =$ ..... [1]

(b) $\tan(90-\alpha)$.

$\tan(90-\alpha) =$ ..... [1]

Question 17 is printed on the next page.

17 Simplify.

$$\frac{3x-6y-ax+2ay}{x^3-2x^2y}$$

..... [4]