Cambridge Assessment International Education

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5358682218

CAMBRIDGE INTERNATIONAL MATHEMATICS **0607/22**

Paper 2 (Extended) **May/June 2022**

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.

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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. $\quad A = \pi rl$

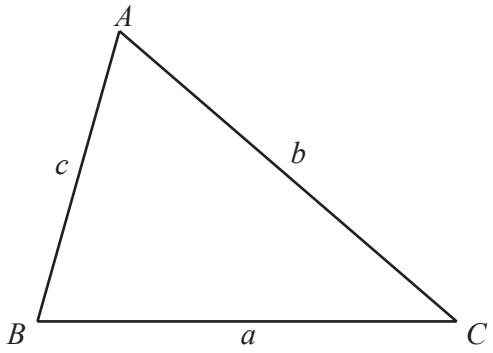
Curved surface area, A, of sphere of radius r. $\quad A = 4\pi r^2$

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.

$(0.03)^2$

..... [1]

2 **(a)** Write the fraction $\frac{15}{40}$ in its lowest terms.

..... [1]

(b) Work out.

$\frac{2}{3} + \frac{2}{9}$

..... [2]

3 Solve the equation.

$x - 11 = -4$

$x =$ ..... [1]

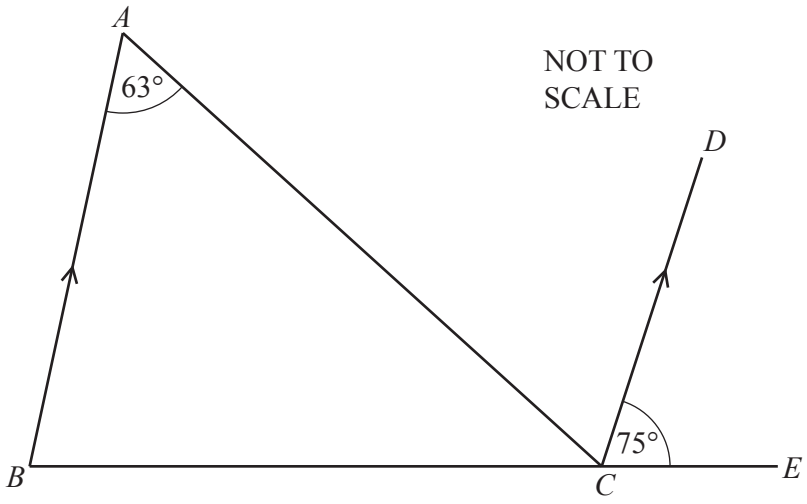
4 Change $600\,\text{cm}^3$ into m^3.

..... m^3 [1]

5 Work out $64^{\frac{1}{3}}$.

..... [1]

6



AB is parallel to *CD*.

Find angle *ACD*.

Angle *ACD* = ... [1]

7 Kendra jogs 7 km in 45 minutes.
She then runs at 12 km/h for 30 minutes.

Find her average speed in km/h for the whole journey.

..... km/h [3]

8 The mean of eight numbers is 25.
When two extra numbers are included the mean of the ten numbers is 24.

Find the mean of the two extra numbers.

..... [2]

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9 Solve the simultaneous equations.

$$5x + 2y = -12$$
$$3x - y = -5$$

$x =$ .....

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

10 A is the point (–1, 13) and B is the point (3, 1).

Find the equation of the line AB, giving your answer in the form $y = mx + c$.

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

11 Solve.

$$6x^2 - 5x - 6 = 0$$

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

12 The lengths of the sides of a triangle are 3 cm, 4 cm and 5 cm.

Find the sine of the smallest angle.

..... [1]

13 John goes to a shop that sells newspapers and magazines only.

(a) Complete the table of probabilities of John buying something at the shop.

	Buys a newspaper	Does not buy a newspaper	Total
Buys a magazine			0.40
Does not buy a magazine	0.25		
Total	0.55		1.00

[2]

(b) Find the probability that John buys a magazine but not a newspaper.

..... [1]

14 $f(x) = |2x + 3|$

Find the values of x when $f(x) = 15$.

..... [2]

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15 A bag has 5 black counters, 4 white counters and 1 red counter.
One counter is chosen at random and is replaced.
A second counter is then chosen at random.

Find the probability that the two counters chosen are different colours.

..... [4]

16 Solve.

$$\log x = 1 + \log 9 - \log 8 + 2\log\frac{2}{3}$$

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

Question 17 is printed on the next page.

17 **(a)** Expand the brackets and simplify.

$$\left(\sqrt{a}+\sqrt{b}\right)\left(\sqrt{a}-\sqrt{b}\right)$$

..... [2]

(b) Rationalise the denominator.

$$\frac{1}{\sqrt{7}+\sqrt{6}}$$

..... [1]

(c) Work out the value of

$$\frac{1}{\sqrt{9}+\sqrt{8}}+\frac{1}{\sqrt{8}+\sqrt{7}}+\frac{1}{\sqrt{7}+\sqrt{6}}+\frac{1}{\sqrt{6}+\sqrt{5}}+\frac{1}{\sqrt{5}+\sqrt{4}}.$$

..... [2]

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