Cambridge IGCSE

Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

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1833319952

CAMBRIDGE INTERNATIONAL MATHEMATICS **0607/21**

Paper 2 (Extended) **May/June 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.

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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. $\quad A = \pi rl$

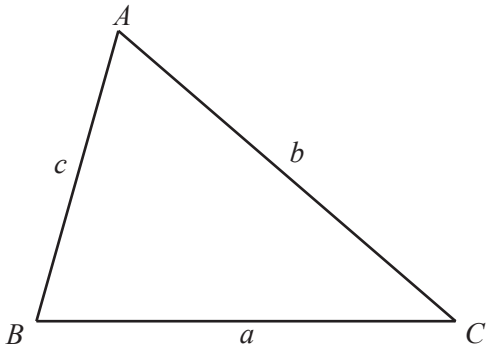
Curved surface area, A, of sphere of radius r. $\quad A = 4\pi r^2$

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 Work out.

$(0.6)^2$

..... [1]

2 **(a)** Write the fraction $\frac{16}{60}$ in its lowest terms.

..... [1]

(b) Work out.

$\frac{4}{11} + \frac{5}{11}$

..... [1]

3 Expand.

$x(x^3 - 4x)$

..... [2]

4 Change $430\,\text{cm}^2$ into m^2.

..... m^2 [1]

5 Write down the value of 16^0.

..... [1]

6 Find the lowest common multiple (LCM) of 20 and 24.

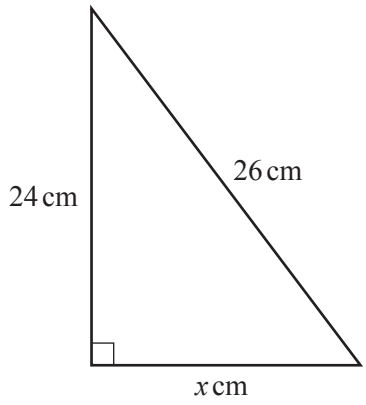
..... [2]

7 $f(x) = x^3 - 2$

Find the value of x when $f(x) = 25$.

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

8



NOT TO SCALE

Find the value of x.

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

9 Solve the simultaneous equations.

$$4x + 3y = 0$$
$$2x - y = 5$$

$x =$ .....

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

10 $p = \begin{pmatrix} 6 \\ 3 \end{pmatrix}$

Find $|p|$, giving your answer in the form $3\sqrt{a}$.

..... [2]

11 A is the point (3, 11) and B is the point (7, 3).

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

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

12 Solve.

$$2x^2 - 5x - 7 = 0$$

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

13 By rationalising the denominator, simplify

$$\frac{12}{\sqrt{6} - 2}.$$

..... [3]

14 A bag has 3 blue balls and 7 green balls only.
One ball is chosen at random and not replaced.
A second ball is then chosen at random.

Find the probability that both balls chosen are the same colour.
Give your answer in its simplest form.

..... [4]

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15 Expand the brackets and simplify.

$$(4x-3y)(2x-5y)$$

..... [3]

16 Simplify.

$$2\log 3 - 3\log 2 + 2\log\frac{2}{3}$$

..... [3]

17 Write the list of numbers in order, starting with the smallest.

$\sin 60°$ $\cos 60°$ $\tan 60°$ $\sqrt{2}$

..... < ..... < ..... < ..... [2]

smallest

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