Cambridge IGCSE

Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

CANDIDATE NAME

CENTRE NUMBER

CANDIDATE NUMBER

0297609332

CAMBRIDGE INTERNATIONAL MATHEMATICS **0607/21**

Paper 2 (Extended) **October/November 2018**

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 **7** printed pages and **1** blank page.

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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. $\quad A = \pi rl$

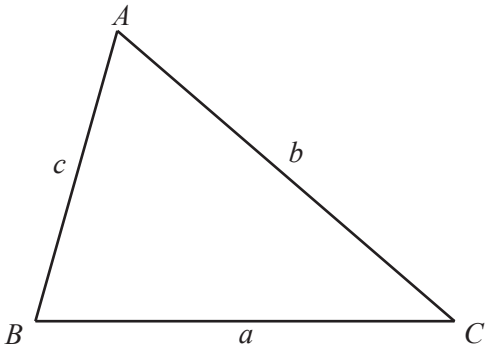
Curved surface area, A, of sphere of radius r. $\quad A = 4\pi r^2$

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



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

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

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

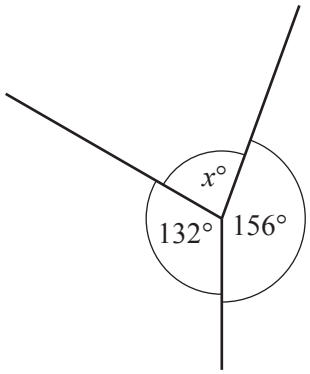
Answer **all** the questions.

1 Work out.

-7×-5

..... [1]

2



NOT TO SCALE

Find the value of x.

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

3 A bag contains 8 blue balls, 3 red balls and 4 green balls only.
One ball is chosen at random.

Find the probability that this ball is red.
Give your answer as a fraction in its simplest form.

..... [2]

4 Write 3^{-2} as a fraction.

..... [1]

5 Solve.

$6x - 5 = 19$

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

[Turn over

6 Find the lowest common multiple (LCM) of 12 and 15.

..... [2]

7 Find the size of one exterior angle of a regular octagon.

..... [2]

8 The point A has co-ordinates (1, 9). The point B has co-ordinates (4, 5).

Find the length of AB.

..... [2]

9 Simplify.

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

..... [2]

10 List the integer values of x for which $-4 \leqslant 2x < 6$.

..... [2]

11 Simplify.

$$\sqrt{32} - \sqrt{72} + \sqrt{50}$$

..... [2]

12 Find the next term and an expression for the nth term of the following sequence.

$$-9, \quad -3, \quad 7, \quad 21, \quad 39, \quad \ldots$$

next term = ...

nth term = ... [3]

13 The bearing of point B from point A is 234°.

Work out the bearing of point A from point B.

..... [2]

14 Solve the simultaneous equations.

$$3x + 2y = 4$$
$$2x - 3y = 7$$

$x =$ .....

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

15 Factorise.

$$4x^2 - 7x - 2$$

..... [2]

16 A bag contains 4 red balls and 5 blue balls only.
Two balls are chosen at random without replacement.

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

..... [3]

17 Rationalise the denominator, giving your answer in its simplest form.

$$\frac{5+\sqrt{3}}{5-\sqrt{3}}$$

..... [3]

18 The surface area of a sphere with radius r is equal to the curved surface area of a cone with radius r and height h.

Show that $h = r\sqrt{k}$, where k is a constant.

[4]

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