Cambridge IGCSE

Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

CANDIDATE NAME	
CENTRE NUMBER	
CANDIDATE NUMBER	

4065397237

CAMBRIDGE INTERNATIONAL MATHEMATICS **0607/21**

Paper 2 (Extended) **May/June 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 **8** printed pages.

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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. $\quad A = \pi rl$

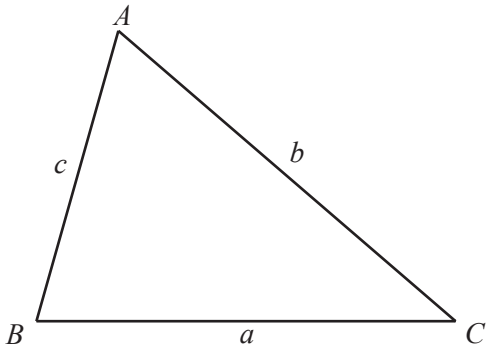
Curved surface area, A, of sphere of radius r. $\quad A = 4\pi r^2$

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.

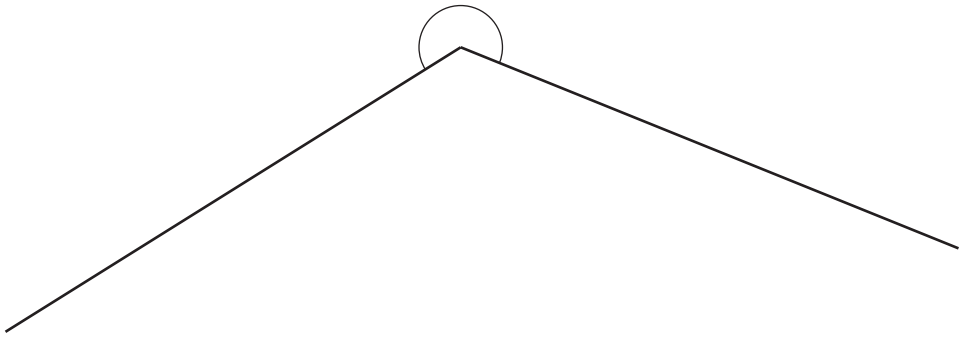
1 **(a)** Work out $5-7\times2+8$.

..... [1]

(b) Find $\sqrt[3]{0.001}$.

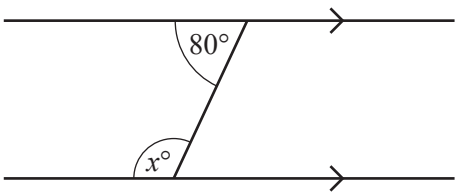
..... [1]

2 **(a)** Find, by measuring, the size of this reflex angle.



..... [1]

(b)



NOT TO SCALE

Work out the value of x.

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

(c) Find the size of one exterior angle of a regular 18-sided polygon.

..... [2]

3 Solve these simultaneous equations.

$$x - 3y = 7$$
$$x - 2y = 5$$

$x =$ .....

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

4 **(a)** Write 0.68 as a fraction in its lowest terms.

..... [1]

(b) Work out $\frac{3}{7} \div \frac{8}{9}$.

..... [2]

5 These are the first five terms of a sequence.

1 0 1 4 9

Find the nth term of this sequence.

..... [2]

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6 **(a)** Expand and simplify.

$$(2p-7q)(p+q)$$

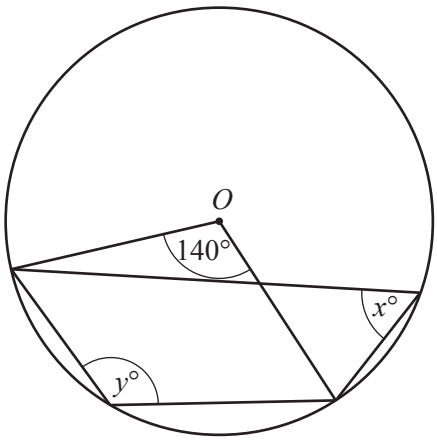
..... [2]

(b) Factorise.

$$2-t-2a+at$$

..... [2]

7



NOT TO SCALE

O is the centre of the circle.

Find the value of x and the value of y.

$x =$ .....

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

8 y varies inversely as x^2.
When $x = 3$, $y = 4$.

Find y in terms of x.

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

9 **(a)** Find the value of $27^{\frac{2}{3}}$.

..... [1]

(b) Simplify $18h^{18} \div 3h^3$.

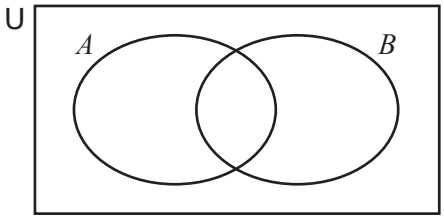
..... [2]

10 $v^2 = u^2 - 2as$

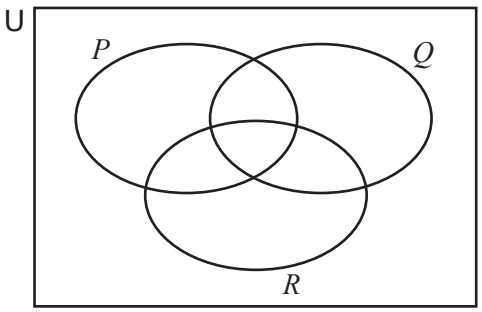
Find s in terms of a, u and v.

$s =$ ..... [2]

11 In each Venn diagram, shade the region indicated.



$(A \cup B)'$



$(P \cup Q) \cap R$

[2]

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12 **(a)** Simplify fully.

$$\sqrt{700}$$

..... [1]

(b) Rationalise the denominator.

$$\frac{1}{7-\sqrt{2}}$$

..... [2]

13 Simplify fully.

$$\frac{3t-t^2}{9-t^2}$$

..... [3]

14 **(a)** Write down the value of $\log_9 3$.

..... [1]

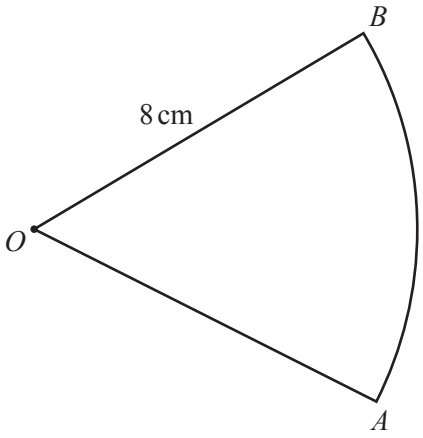
(b) $2\log 2 + \log 11 = \log x$.

Find the value of x.

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

Question 15 is printed on the next page.

15



NOT TO SCALE

The length of the arc $AB = \frac{4\pi}{3}$ cm.

The area of the sector OAB is $k\pi$ cm^2.

Find the value of k.

$k =$ ..... [3]

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