Cambridge Assessment International Education

Cambridge IGCSE™

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER				

0529762483

CAMBRIDGE INTERNATIONAL MATHEMATICS **0607/22**

Paper 2 (Extended) **October/November 2021**

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 **12** pages. Any blank pages are indicated.

© UCLES 2021

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. $\quad A = \pi rl$

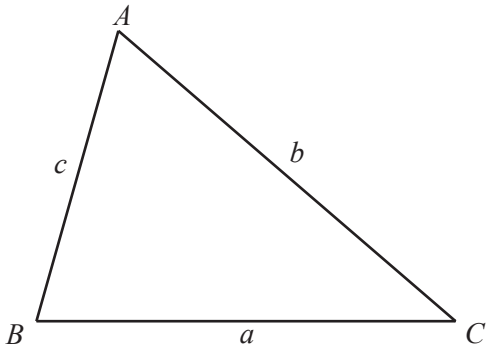
Curved surface area, A, of sphere of radius r. $\quad A = 4\pi r^2$

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.

$3 + 7 \times 2 + 5$

..... [1]

2 Complete the statement.

A parallelogram has rotational symmetry of order .....

and ..... lines of symmetry. [2]

3 **(a)** A number is greater than 1.
The number is also both a square number and a cube number.

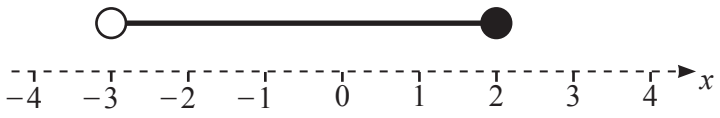
Write down a possible value of this number.

..... [1]

(b) Write down a prime number between 90 and 100.

..... [1]

4



Write down the inequality shown on the number line.

..... [1]

5 Work out.

$$\frac{3}{4} \div \frac{8}{9}$$

..... [2]

6 $|x| < 2$

Write down all the integer values of x.

..... [1]

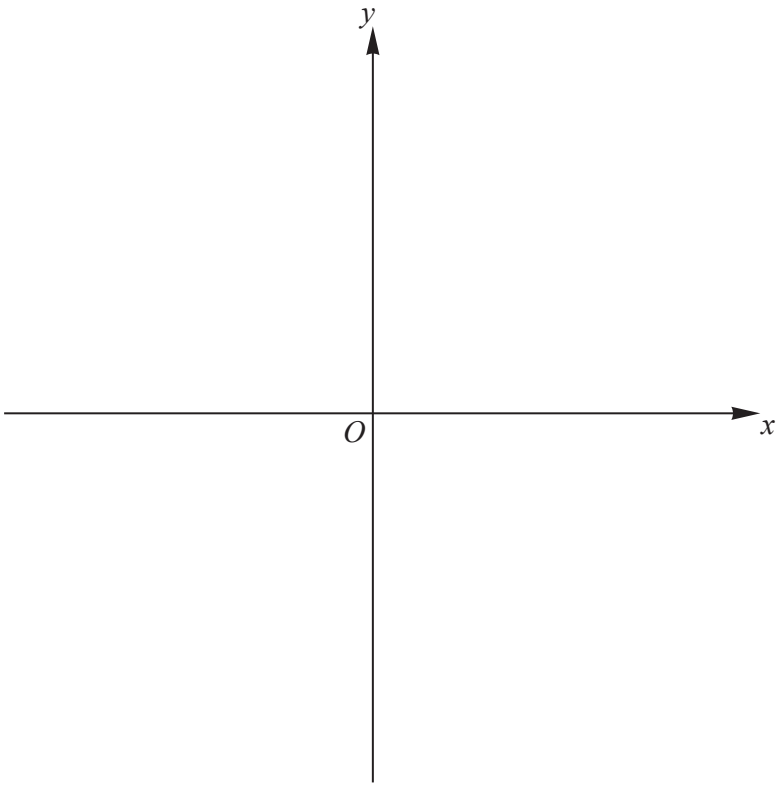
7 The bearing of P from Q is 110°.

Find the bearing of Q from P.

..... [2]

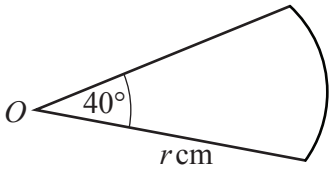
© UCLES 2021

8 On the diagram, sketch the graph of $y = \frac{1}{x}$.



[2]

9



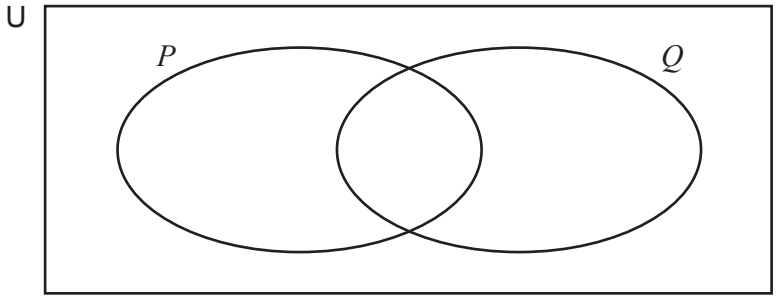
NOT TO SCALE

The diagram shows an arc of a circle, centre O, radius r cm.
The length of the arc is $k\pi r$ cm.

Find the value of k.
Give your answer as a fraction in its simplest form.

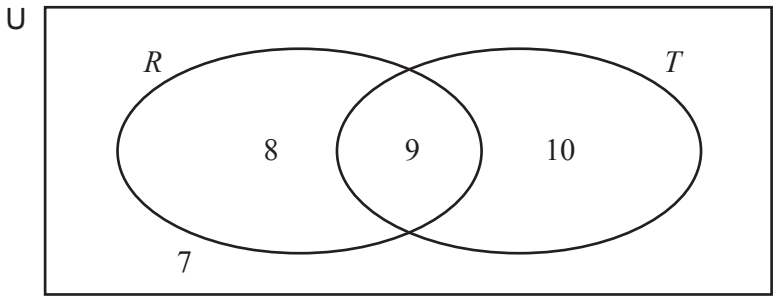
$k =$ ..... [2]

10 **(a)** Shade the region $(P \cup Q)'$.



[1]

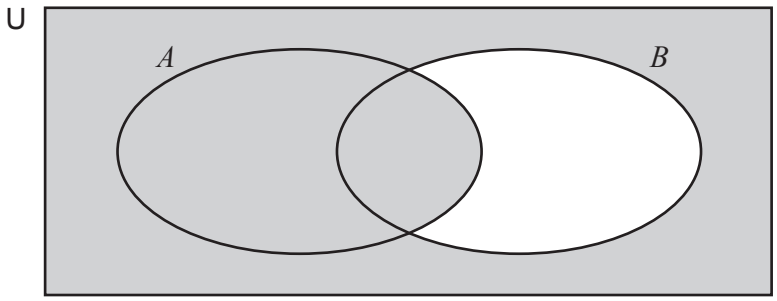
(b) The Venn diagram shows the number of elements in each region.



Find $n(R \cap T')$.

..... [1]

(c) Use set notation to describe the shaded region.



..... [1]

© UCLES 2021

11 $y = \frac{w^2}{2}$

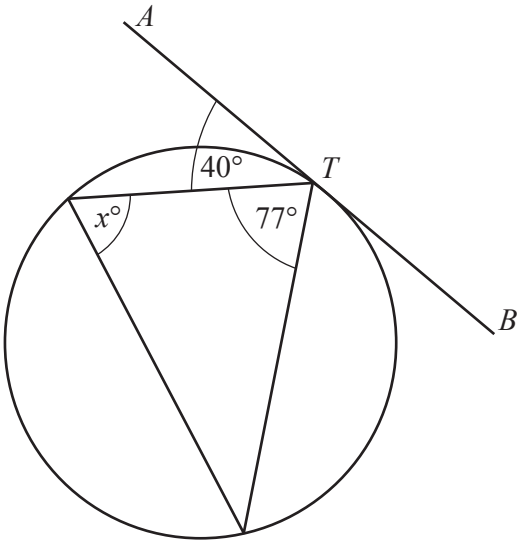
Rearrange the formula to make w the subject.

$w =$ ..... [1]

12 Work out the value of $32^{\frac{2}{5}}$.

..... [1]

13



NOT TO SCALE

AB is a tangent to the circle at *T*.

Find the value of *x*.

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

14 Simplify.

$$\sqrt{125} + \sqrt{80}$$

..... [2]

15 Solve.

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

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

16 Factorise.

$$3x + 6 - 2xy - 4y$$

..... [2]

17 $3^x = 27^{x+2}$

Find the value of x.

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

18 Simplify.

$$\frac{w^2-9}{2w^2+5w-3}$$

..... [4]

19 $\log 48 + \log 18 - 2\log 24 = \log t$

Find the value of t.

$t =$ ..... [3]

© UCLES 2021

20 $\tan x = k$ $\quad 0° < x < 90°$

Find, in terms of k,

(a) $\tan(180° - x)$,

..... [1]

(b) $\tan(90° - x)$.

..... [1]

BLANK PAGE

Permission to reproduce items where third-party owned material protected by copyright is included has been sought and cleared where possible. Every reasonable effort has been made by the publisher (UCLES) to trace copyright holders, but if any items requiring clearance have unwittingly been included, the publisher will be pleased to make amends at the earliest possible opportunity.

To avoid the issue of disclosure of answer-related information to candidates, all copyright acknowledgements are reproduced online in the Cambridge Assessment International Education Copyright Acknowledgements Booklet. This is produced for each series of examinations and is freely available to download at www.cambridgeinternational.org after the live examination series.

Cambridge Assessment International Education is part of the Cambridge Assessment Group. Cambridge Assessment is the brand name of the University of Cambridge Local Examinations Syndicate (UCLES), which itself is a department of the University of Cambridge.

© UCLES 2021