Cambridge Assessment International Education

Cambridge IGCSE™

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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.

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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. $\quad A = \pi rl$

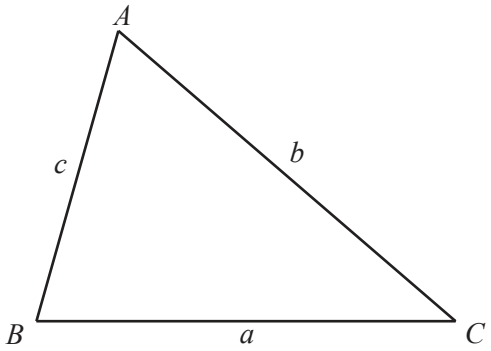
Curved surface area, A, of sphere of radius r. $\quad A = 4\pi r^2$

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.

$3 + 7 \times 2 + 5$

..... [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.

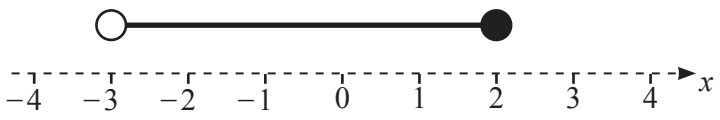
Write down a possible value of this number.

..... [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.

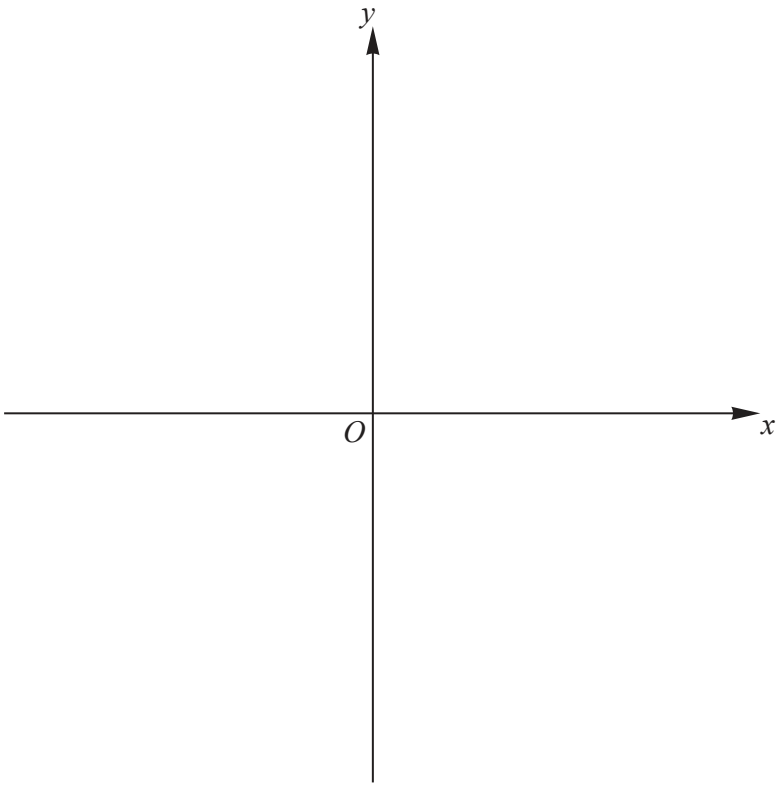
..... [1]

7 The bearing of P from Q is 110°.

Find the bearing of Q from P.

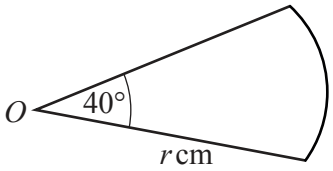
..... [2]

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



[2]

9



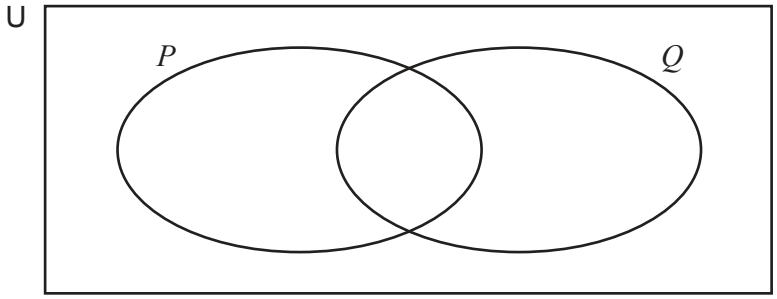
NOT TO SCALE

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.

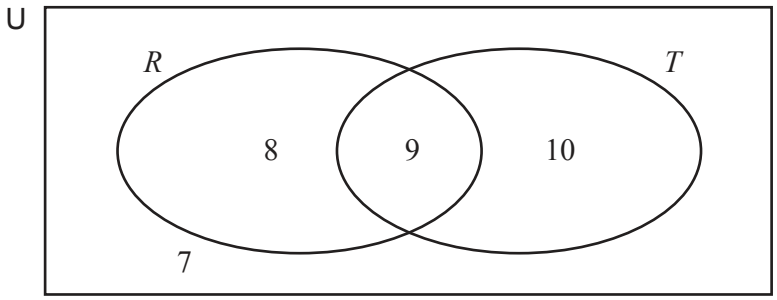
$k =$ ..... [2]

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



[1]

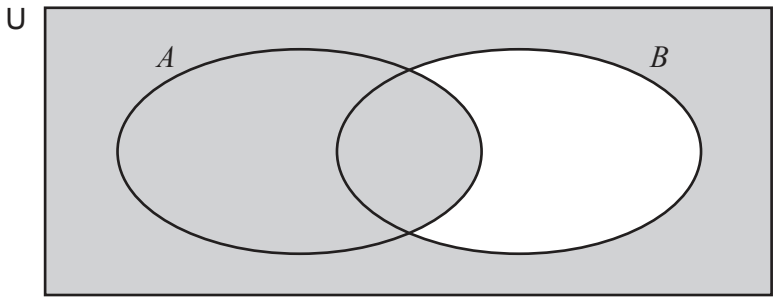
(b) The Venn diagram shows the number of elements in each region.



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

..... [1]

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



..... [1]

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

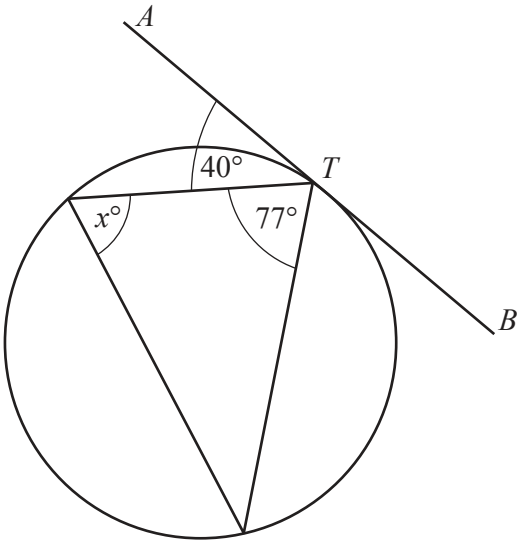
Rearrange the formula to make w the subject.

$w =$ ..... [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]

20 $\tan x = k$ $\quad 0° < x < 90°$

Find, in terms of k,

(a) $\tan(180° - x)$,

..... [1]

(b) $\tan(90° - x)$.

..... [1]

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