Cambridge Assessment International Education

Cambridge IGCSE™

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER				

7291996204

CAMBRIDGE INTERNATIONAL MATHEMATICS **0607/13**

Paper 1 (Core) **October/November 2022**

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 **8** pages.

Formula List

Area, A, of triangle, base b, height h.	$A = \frac{1}{2}bh$
Area, A, of circle, radius r.	$A = \pi r^2$
Circumference, C, of circle, radius r.	$C = 2\pi r$
Curved surface area, A, of cylinder of radius r, height h.	$A = 2\pi rh$
Curved surface area, A, of cone of radius r, sloping edge l.	$A = \pi rl$
Curved surface area, A, of sphere of radius r.	$A = 4\pi r^2$
Volume, V, of prism, cross-sectional area A, length l.	$V = Al$
Volume, V, of pyramid, base area A, height h.	$V = \frac{1}{3}Ah$
Volume, V, of cylinder of radius r, height h.	$V = \pi r^2 h$
Volume, V, of cone of radius r, height h.	$V = \frac{1}{3}\pi r^2 h$
Volume, V, of sphere of radius r.	$V = \frac{4}{3}\pi r^3$

Answer **all** the questions.

1 Write the number twenty thousand eight hundred in figures.

..... [1]

2 Write down all the factors of 39.

..... [2]

3 Change $3\frac{1}{2}$ years into months.

..... months [1]

4 A spool contains 100 m of thread.

Work out the total length of thread on 70 spools.
Give your answer in kilometres.

..... km [2]

5 Dewi walks due East from his home.

Complete the statement.

Dewi walks on a bearing of ..... [1]

6 Write 368.276 correct to the nearest ten.

..... [1]

7 The table shows the time taken to soak and then sprout different seeds.

	Soak	Sprout
Mustard	6 hours	5 days
Radish	5 hours	4 days

Work out how much longer it takes to soak and sprout mustard seeds than to soak and sprout radish seeds.
Give your answer in hours.

..... hours [2]

8 Work out.

$6 - 18 \div 2$

..... [1]

9 $\frac{1}{4}$ 20% 0.24 0.3

Write these numbers in order of size, starting with the smallest.

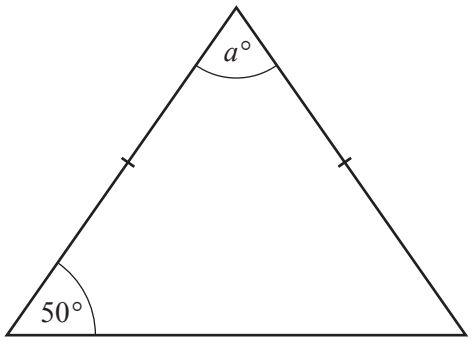
..... < ..... < ..... < ..... [2]
smallest

10 Four pens cost $1.

Work out the cost of five pens.

$ ..... [2]

11

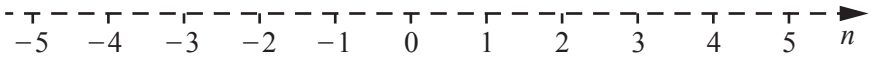


NOT TO SCALE

Work out the value of a.

$a =$ ..... [2]

12 **(a)** Show the inequality $n \leqslant -2$ on this number line.



[1]

(b) Write down the largest integer value, n, for which $n \leqslant -2$.

..... [1]

13 Factorise fully.

$6x^3 - 8x$

..... [2]

14 There are two prime numbers between 60 and 70.

Complete this statement about these prime numbers.

The difference between the prime numbers ..... and ..... is ..... [2]

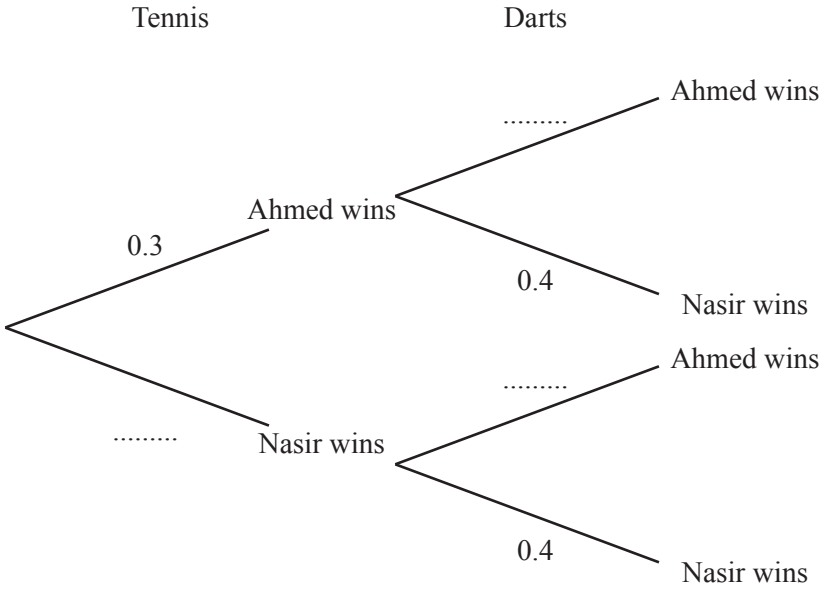
15 $g(x) = \sqrt[3]{3x}$

Work out g(9).

..... [1]

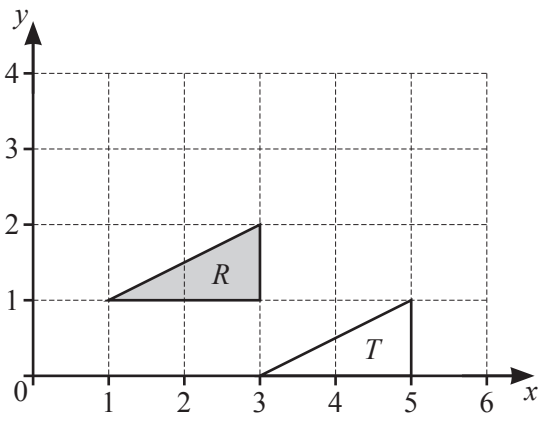
16 Ahmed and Nasir play a game of tennis followed by a game of darts.
The probability of Ahmed winning the game of tennis is 0.3 .
The probability of Nasir winning the game of darts is 0.4 .

Complete the tree diagram.



[1]

17



Describe fully the **single** transformation that maps triangle *R* onto triangle *T*.

.....

..... [2]

18 Benji walks 20 km in 4 hours.
Wynn's average speed is 1 km/h faster than Benji's average speed.

Work out the distance Wynn walks in 3 hours.

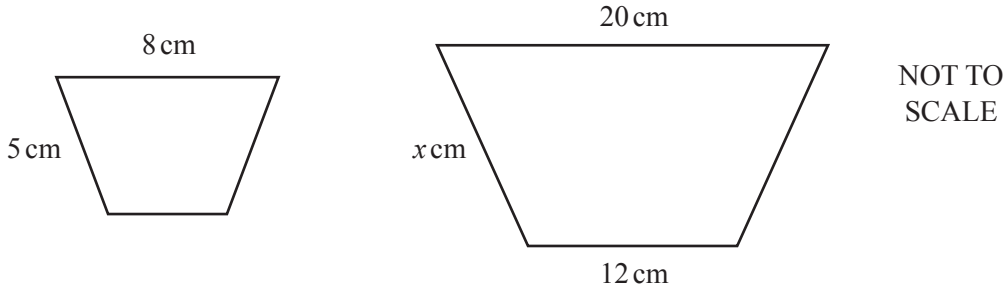
..... km [3]

19 Simplify fully.

$5(x^2 - 3) - 2(x^2 + 5)$

..... [2]

20



These two shapes are mathematically similar.

Find the value of x.

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

Questions 21, 22 and 23 are printed on the next page.

21 Find the value of x when $\frac{8^9}{8^3} = 8^x$.

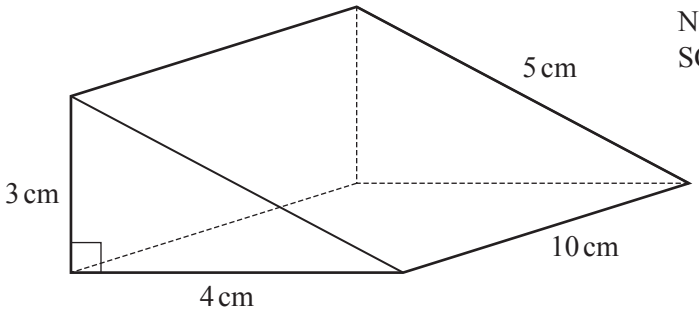
$x =$ ..... [1]

22 A bag contains 5 black counters and 6 white counters.
Manjit takes one counter out of the bag at random, notes its colour and replaces it.
She does this a second time.

Find the probability that both the counters are black.

..... [2]

23



The diagram shows a triangular prism.

Calculate its total surface area.

..... cm^2 [3]