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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

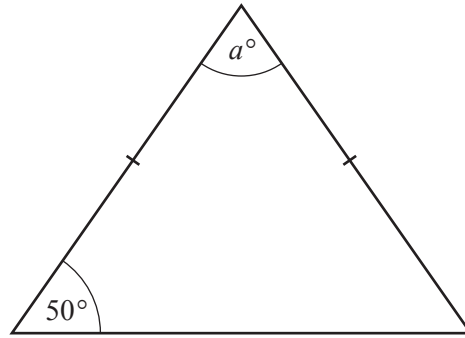
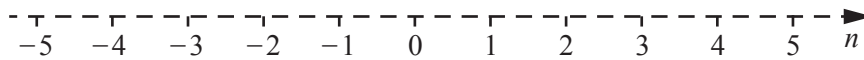
- 10 Four pens cost \$1.

Work out the cost of five pens.

\$ [2]

5

11

NOT TO
SCALEWork out the value of a . $a = \dots\dots\dots$ [2]12 (a) Show the inequality $n \leq -2$ on this number line.

[1]

(b) Write down the largest integer value, n , for which $n \leq -2$. $\dots\dots\dots$ [1]

13 Factorise fully.

$$6x^3 - 8x$$

 $\dots\dots\dots$ [2]

14 There are two prime numbers between 60 and 70.

Complete this statement about these prime numbers.

The difference between the prime numbers $\dots\dots\dots$ and $\dots\dots\dots$ is $\dots\dots\dots$ [2]

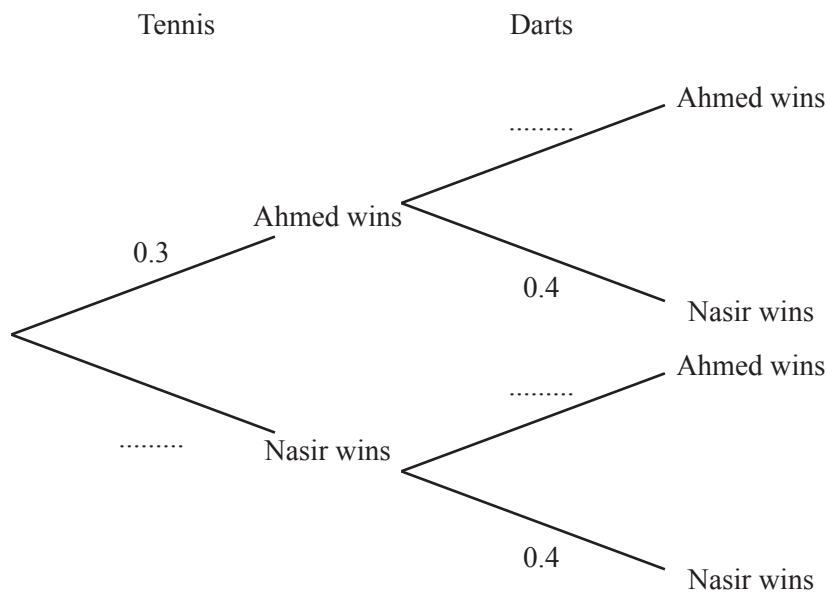
15 $g(x) = \sqrt[3]{3x}$

Work out $g(9)$.

..... [1]

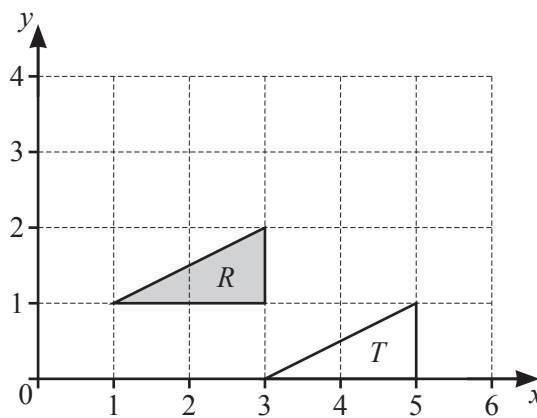
- 16 Ahmed and Nasir play a game of tennis followed by a game of darts.
 The probability of Ahmed winning the game of tennis is 0.3 .
 The probability of Nasir winning the game of darts is 0.4 .

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.

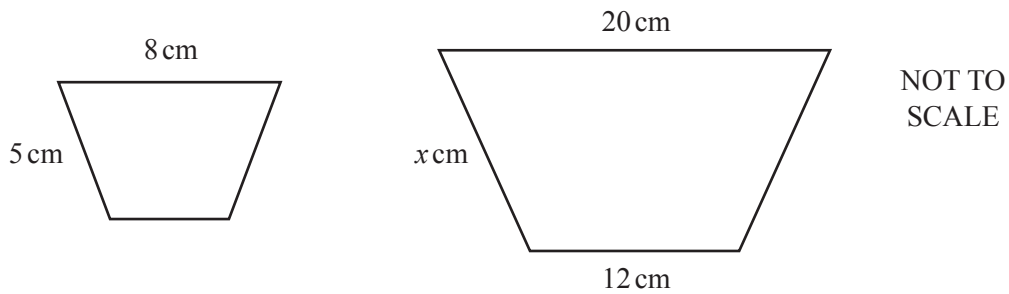
..... km [3]

- 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 $\frac{8^9}{8^3} = 8^x$.

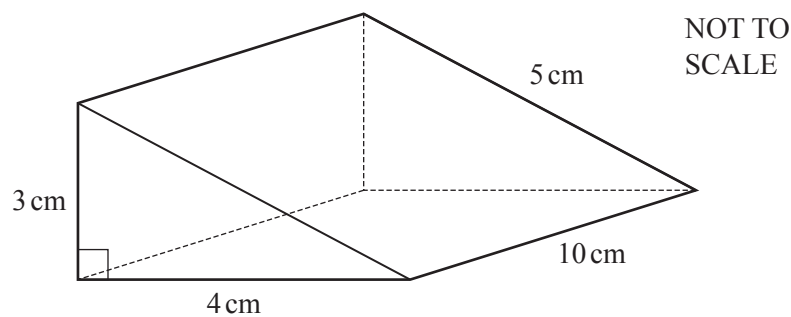
$x = \dots\dots\dots$ [1]

- 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.

$\dots\dots\dots$ [2]

- 23



The diagram shows a triangular prism.

Calculate its total surface area.

$\dots\dots\dots \text{cm}^2$ [3]

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