Cambridge Assessment International Education

Cambridge IGCSE™

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CAMBRIDGE INTERNATIONAL MATHEMATICS **0607/13**

Paper 1 (Core) **May/June 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.

DC (RW/CT) 220236/1

Formula List

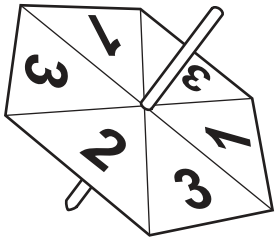
Area, A, of triangle, base b, height h.	$A = \frac{1}{2}bh$
Area, A, of circle, radius r.	$A = \pi r^2$
Circumference, C, of circle, radius r.	$C = 2\pi r$
Curved surface area, A, of cylinder of radius r, height h.	$A = 2\pi rh$
Curved surface area, A, of cone of radius r, sloping edge l.	$A = \pi rl$
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 $\frac{1}{4}$ as a percentage.

..... % [1]

2



The diagram shows a fair 6-sided spinner which can land on the numbers 1, 2 or 3.

Write down the number on which the spinner is least likely to land.

..... [1]

3 Change 4 centilitres into millilitres.

..... ml [1]

4 Write 26 830 correct to the nearest hundred.

..... [1]

5 Canoe hire costs $30 per day.
A canoe is hired for 7 days.

Work out the total cost.

$ ..... [1]

6 The table shows some data collected in a probability experiment.

Put a tick (✓) in each row to show whether the data is discrete or continuous.

Data	Discrete	Continuous
Score on die		
Number of rolls of die		
Time taken to roll die		

[1]

[Turn over

7 A is the point (3, 2) and B is the point (3, 8).

Work out the length of AB.

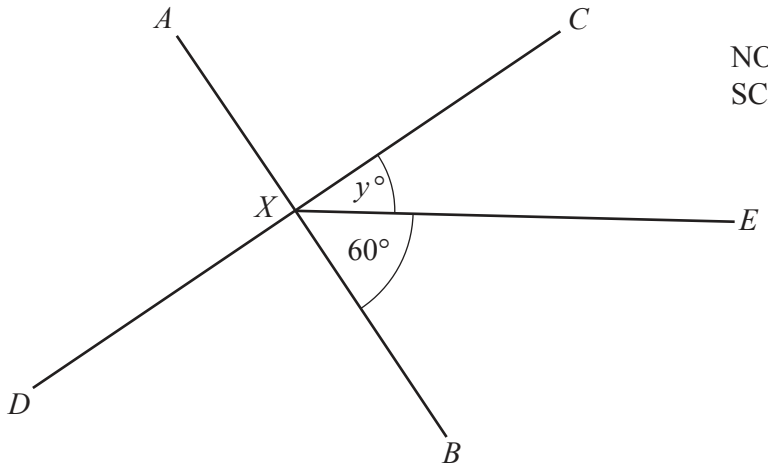
..... units [1]

8 Fill in the two missing terms of the sequence.

$-4,$ ☐, $2,\quad 5,\quad 8,$ ☐, $\ldots$

[2]

9



Lines AB and CD are straight lines that intersect at right angles at X.

Find the value of y.

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

10 Simplify.

$3a + 4b + 2b - a$

..... [2]

11 A cuboid has a volume of $300\,cm^3$.
The length of the cuboid is 25 cm and the width is 4 cm.

Find its height.

..... cm [2]

12 Insert two pairs of brackets to make this statement correct.

$$3 + 2 \times 5 = 5 \times 4 + 6 \div 2 = 25$$

[2]

13 In a sale a shop reduces its prices by 10%.
Paula buys a coat which had an original price of $50.

Work out how much Paula pays for the coat.

$ ..... [2]

14 Work out the size of one exterior angle of a 12-sided regular polygon.

..... [2]

[Turn over

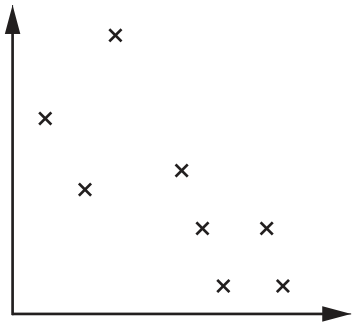
15 The table shows the number of spots on each of 30 ladybirds.

Number of spots	0	2	7	10	13
Frequency	5	2	11	9	3

Work out the mean number of spots.

..... [3]

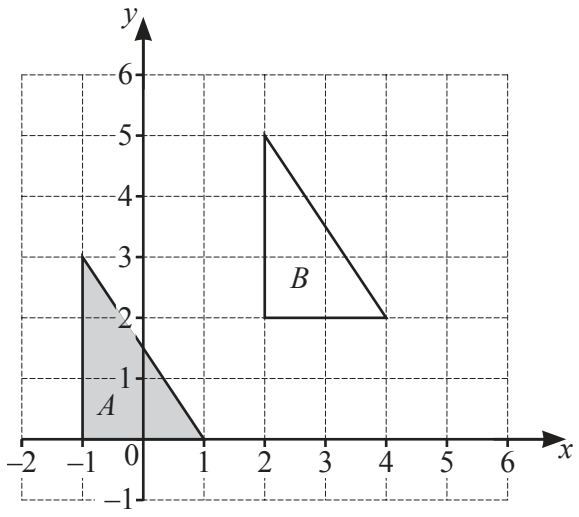
16



What type of correlation is shown on the scatter diagram?

..... [1]

17



Describe fully the **single** transformation that maps triangle *A* onto triangle *B*.

.....

..... [2]

18 Find the highest common factor (HCF) of 15 and 65.

..... [1]

19 A machine produces rivets.
For every 50 rivets the machine produces, 1 rivet is defective.

(a) A rivet is chosen at random.

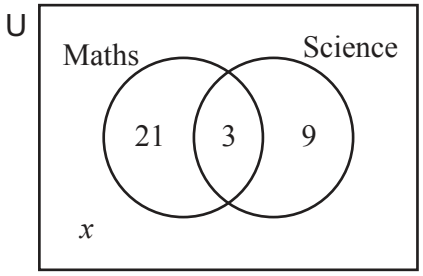
Find the probability that this rivet is defective.

..... [1]

(b) In a batch of 10 000 rivets, find the expected number of defective rivets.

..... [2]

20



The number of students in a class studying maths and science are shown in the Venn diagram.

(a) Write down how many students study both subjects.

..... [1]

(b) Find how many students study only one of these subjects.

..... [1]

(c) There are 50 students altogether.
x students do not study either maths or science.

Find the value of x.

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

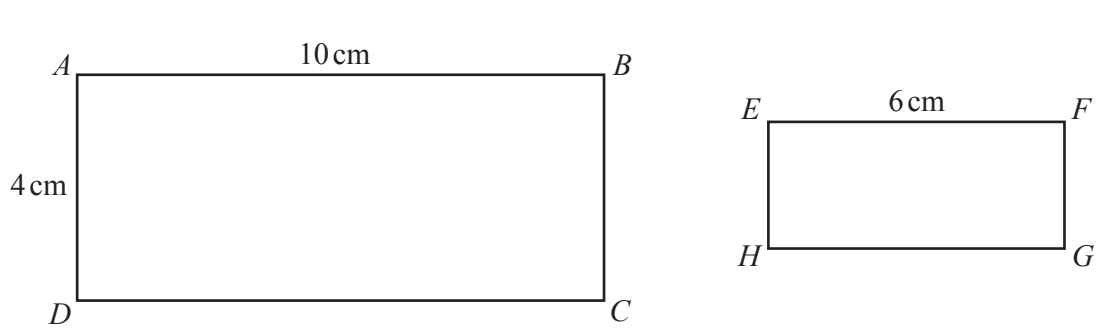
Questions 21, 22 and 23 are printed on the next page.

21 The width of a fibre is 0.000 019 m.

Write the width in standard form.

..... m [1]

22



Rectangles *ABCD* and *EFGH* are mathematically similar.

Work out *EH*.

EH = ... cm [2]

23 Solve.

$10x + 7 < 5$

..... [2]