Cambridge Assessment International Education

Cambridge IGCSE™

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER				

2902605538

MATHEMATICS **0580/12**

Paper 1 (Core) **February/March 2024**

1 hour

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.
- You should use a calculator where appropriate.
- You may use tracing paper.
- You must show all necessary working clearly.
- Give non-exact numerical answers correct to 3 significant figures, or 1 decimal place for angles in degrees, unless a different level of accuracy is specified in the question.
- For π, use either your calculator value or 3.142.

INFORMATION

- The total mark for this paper is 56.
- 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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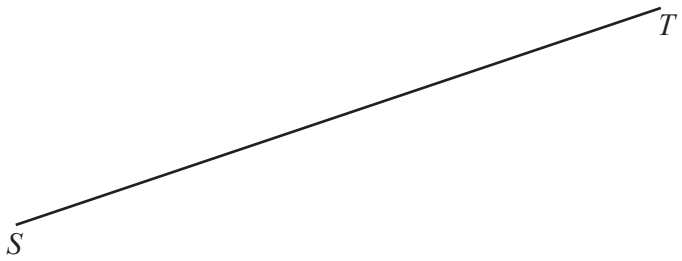
1 Write the number thirty thousand and fifty in figures.

..... [1]

2 Write 5926 correct to the nearest 10.

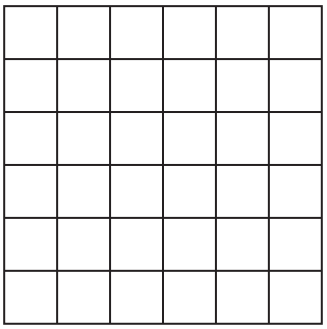
..... [1]

3



Mark the midpoint of the line *ST*. [1]

4 **(a)** Shade $\frac{2}{9}$ of this shape.



[1]

(b) Write $\frac{2}{9}$ as a percentage.

.....% [1]

5 A night bus runs from 21 50 to 05 18 the next day.

Work out the number of hours and minutes that the night bus runs.

..... h ..... min [1]

6 **(a)** 34 55 76 83 111 121

From this list of numbers, write down all the multiples of 11.

..... [1]

(b) Zaid has a non-calculator method for working out if a number is a multiple of 11.
He shows his method for the number 919 281.

Subtract and add alternately the digits in the number.	$9-1+9-2+8-1=22$
Check if the answer is a multiple of 11.	$22=2\times11$
As 22 is a multiple of 11 then 919 281 is a multiple of 11.	

Show that the number 918 271 937 is a multiple of 11 by using Zaid's method.

[2]

7 The range of eight numbers is 31.
These are seven of the numbers.

28 36 42 24 38 16 21

Find the two possible values of the eighth number.

..... or ..... [2]

8 Calculate $\sqrt{5.76} + 2.8^3$.

..... [1]

9 Simplify $4m + 7k - m + 3k$.

..... [2]

10 $-9 \quad -7 \quad -3 \quad -1 \quad 0 \quad 2 \quad 5 \quad 6 \quad 8$

From this list of numbers, find

(a) the highest number possible from the product of **two** of the numbers

..... [1]

(b) the lowest number possible from the product of **three** of the numbers.

..... [1]

11 Sarah records the number of people who play golf on each of 14 days.

28	46	54	71	70	65	49
50	64	77	68	72	45	58

(a) Complete the stem-and-leaf diagram.

2	
3	
4	
5	
6	
7	

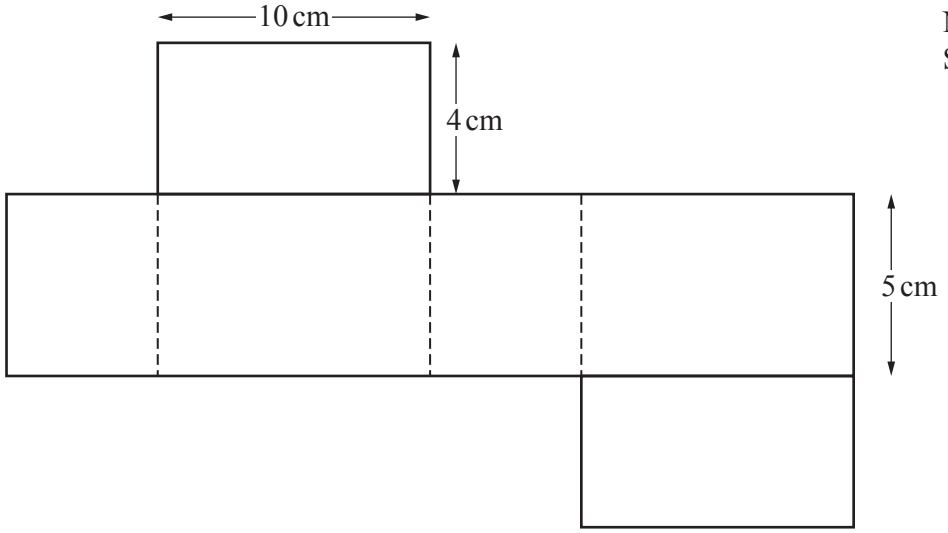
Key : 2 | 8 represents 28

[2]

(b) Find the median.

..... [1]

12



The diagram shows the net of a cuboid.

(a) Work out the surface area of this cuboid.

..... cm^2 [2]

(b) Work out the volume of this cuboid.

..... cm^3 [2]

13 There are 20 cars in a car park and 3 of the cars are blue.

(a) James wants to draw a pie chart to show this information.

Find the angle of the sector for the blue cars in this pie chart.

..... [2]

(b) One of the 20 cars is picked at random.

Find the probability that this car is **not** blue.

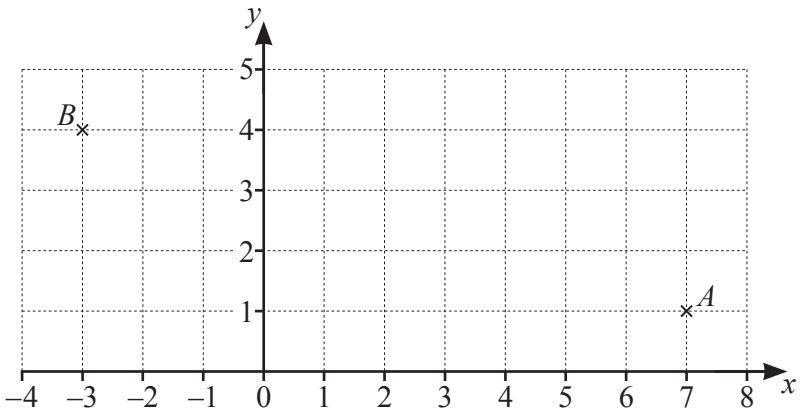
..... [1]

14 Factorise.

$3x^3 - 7xy$

..... [1]

15



Write $\overrightarrow{AB}$ as a column vector.

$\overrightarrow{AB} = \begin{pmatrix} \quad \\ \quad \end{pmatrix}$ [1]

16

Exchange rates
1 euro = 1.05 dollars
1 rupee = 0.013 dollars

Vani changes x euros into dollars.
She then changes the dollars into 17 850 rupees.

Calculate the value of x.

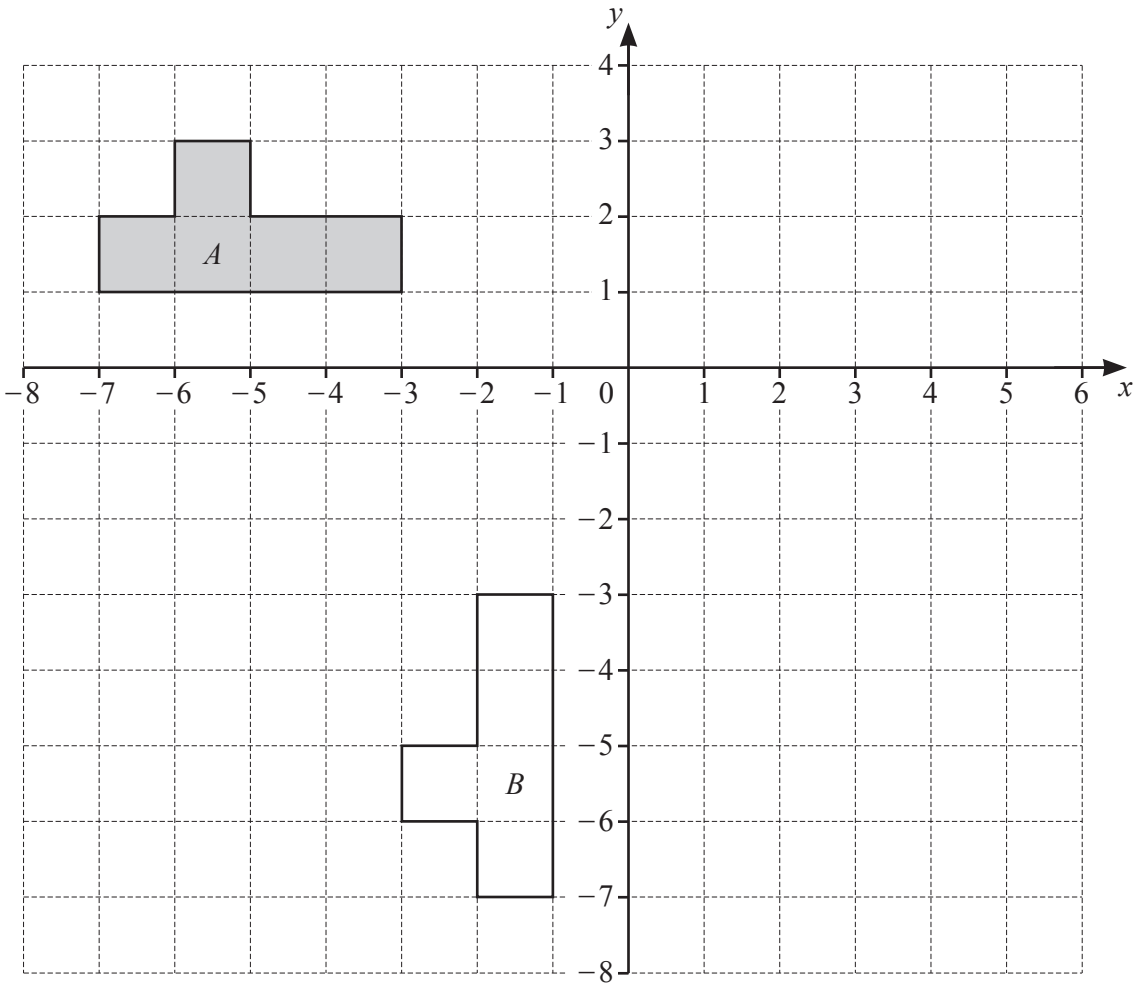
$x =$ ..... [3]

17 The line $y = 2x - 5$ intersects the line $y = 3$ at the point P.

Find the coordinates of the point P.

(....., ...) [2]

18 The diagram shows two shapes, A and B, on a grid.



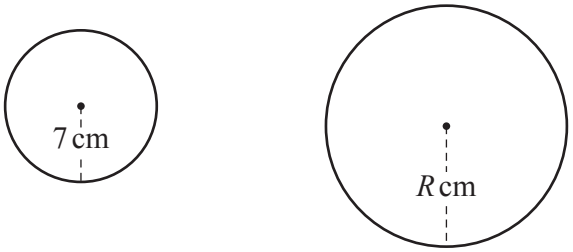
(a) Describe fully the **single** transformation that maps shape A onto shape B.

.....

..... [3]

(b) On the grid, draw the image of shape A after a reflection in the line $x = -1$. [2]

19



NOT TO SCALE

The diagram shows a small circle with radius 7 cm and a large circle with radius R cm.
The area of 16 small circles is the same as the area of one large circle.

Calculate the value of R.

$R =$ ..... [3]

20 **(a)** The nth term of a sequence is $n^2 - 3$.

Find the first three terms of this sequence.

....., ..., ... [2]

(b) These are the first five terms of a different sequence.

2 9 16 23 30

Find the nth term of this sequence.

..... [2]

21 The length, l m, of a rope is 18.7 m, correct to the nearest 10 centimetres.

Complete this statement about the value of l.

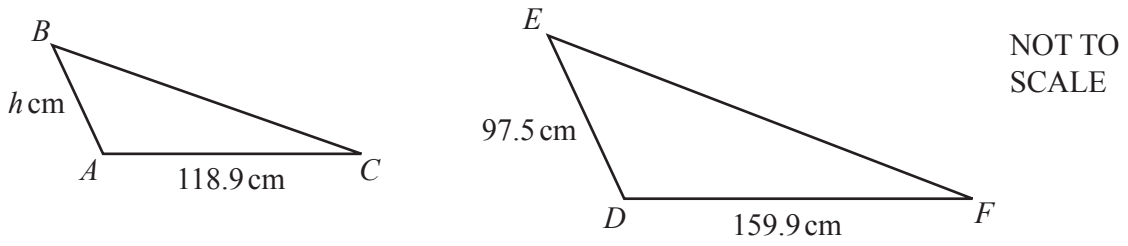
..... $\leqslant l <$ ..... [2]

22 $6.5 \times 10^{19} \times n = 5.46 \times 10^{23}$

Calculate the value of n.
Give your answer in standard form.

$n =$ ..... [2]

23



Triangle ABC is mathematically similar to triangle DEF.

Calculate the value of h.

$h =$ ..... [2]

24 **Without using a calculator**, work out $1\frac{1}{4} - \frac{5}{6}$.

You must show all your working and give your answer as a fraction in its simplest form.

..... [3]

25 The highest common factor (HCF) of two numbers is 6.
The lowest common multiple (LCM) of the two numbers is 90.
Both numbers are greater than 6.

Work out the two numbers.

..... and ..... [2]

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