

## **Cambridge IGCSE**<sup>™</sup>

CANDIDATE NAME					
CENTRE NUMBER			CANDIDATE NUMBER		

\* 265022615

MATHEMATICS 0580/13

Paper 1 (Core) May/June 2021

1 hour

You must answer on the question paper.

You will need: Geometrical instruments

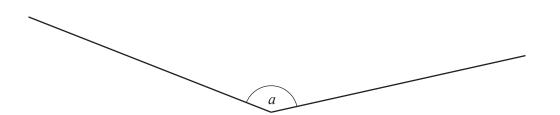
## **INSTRUCTIONS**

- 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  $\pi$ , 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.



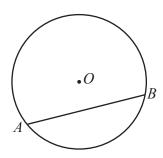
(a) Measure angle a.

-47

**(b)** Write down the mathematical name for this type of angle.

[1
----

2



NOT TO SCALE

Points A and B lie on a circle, centre O.

(a) Write down the mathematical name for line AB.

																																															ı	ı	
•	٠	•		•		•	٠	•		•		•	٠		•	٠	•	•		•		٠	٠	•		•	٠		•		•		•		•	•		•		•	•	٠	•		٠		ı	1	

**(b)** The circle has a diameter of 16.8 cm.

Write down the radius of the circle.

cm [	[1]
------	-----

3 Write down the number that is 23 less than -1.6.

 [1]	1

4 Write as a fraction in its simplest form.

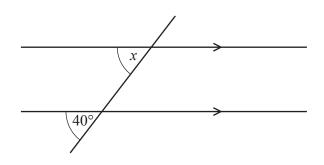
(a) 72%

.....[1]

**(b)** 0.004

.....[1]

5



NOT TO SCALE

The diagram shows a pair of parallel lines and a straight line.

Complete the statement with the correct geometrical reason.

19

6

18 28

15

41

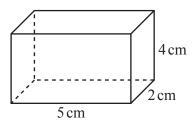
31

53

Calculate the mean of these numbers.

.....[2]

7 The diagram shows a box in the shape of a cuboid. The box has an **open top**.



NOT TO SCALE

(a) On the 1cm<sup>2</sup> grid, draw a net of this box.



[3]

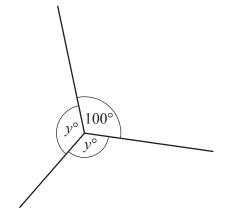
**(b)** The outside of the box is painted.

Work out the total area that is painted.

..... cm<sup>2</sup> [2]

125

8



NOT TO SCALE

Find the value of *y*.

y =	 [2]

**9** 12 18 29 49 91

From the list of numbers, write down

(a) a cube number,

.....[1]

**(b)** a prime number.

.....[1]

**10** (a) 
$$\mathbf{a} = \begin{pmatrix} 3 \\ -4 \end{pmatrix}$$
  $\mathbf{b} = \begin{pmatrix} 5 \\ 2 \end{pmatrix}$ 

Work out.

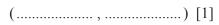
(i) 8b



(ii) a-b



**(b)** Point *L* has coordinates (-3,6) and  $\overrightarrow{LM} = \begin{pmatrix} 5 \\ -2 \end{pmatrix}$ . Find the coordinates of point *M*.



11 Maria buys *n* pencils that cost *p* cents each. She pays with a \$*y* note.

Find, in terms of n, p and y, the amount of change Maria receives. Give your answer in cents.

.....cents [2]

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12 Francesca spins a four-sided spinner numbered 1, 2, 3 and 4. The table shows some of the probabilities of landing on each number.

Number	1	2	3	4
Probability	0.18	0.21	0.37	

	_	_	
Com	nlata	tha	tabla
COIII	DICIC	uic	taule.

[2]

13 Alex changes 190 euros (€) into pounds (£) when £1 = €1.1723 .

Calculate the amount Alex receives. Give your answer correct to 2 decimal places.

•	[O]
J	

14 The exterior angle of a regular polygon is 36°.

Find how many sides this polygon has.



15 Expand and simplify.

$$6(t-q)-2(t-3q)$$

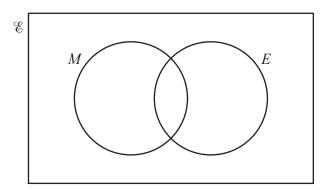


16	Without using a calculator, work out	$1\frac{2}{3} \div 7\frac{1}{2}$
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Without using a calculator, work out  $1\frac{\pi}{3} \div 7\frac{\pi}{2}$ . You must show all your working and give your answer as a fraction in its simplest form.

									[3]
17	The	se are the fir	rst four ter	ms of a sec	quence.				
			7	11	15	19			
	Fino	the <i>n</i> th term	m.						
									[2]
18	(a)	Calculate t	he volume	of a cylind	drical vase w	ith radius 1	14.2 cm and height 18 cm.		
								cm <sup>3</sup>	[2]
	(b)	Change yo	ur answer t	to <b>part (a)</b>	into litres.				
							1i	tres	[1]
19	(a)	Write 0.00	074 in stan	dard form					
									[1]
	(b)	Calculate Give your		$6.7 \times 10^{2}$ standard for		to 2 signific	cant figures.		

- 20 (a) A group of 120 students take two tests, mathematics and English. Here is some information about the number of students who pass mathematics (M) and who pass English (E).
  - 61 students pass mathematics.
  - 27 students pass both mathematics and English.
  - 19 students do not pass mathematics and do not pass English.



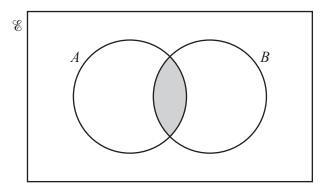
(i) Complete the Venn diagram.

[3]

(ii) Use the Venn diagram to find n(E).

.....[1]

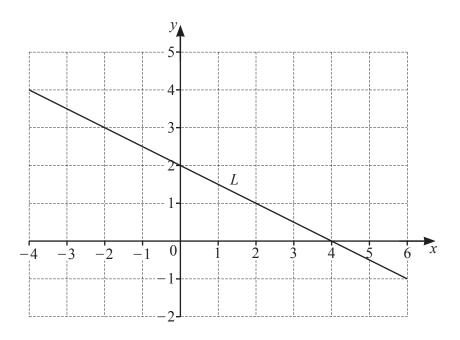
**(b)** 



Use set notation to describe the shaded region.

..... [1]

21 (a)



Find the equation of line L in the form y = mx + c.

v =	[2]
<i>y</i>	4

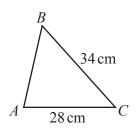
- **(b)** Find the equation of the line which is
  - parallel to the line y = 3x 5

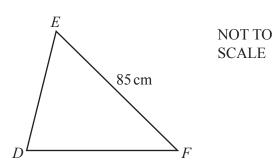
and

• passes through the point (0, 17).

Г1	1
 11	ı

22





Triangle ABC is similar to triangle DEF.

Calculate DF.

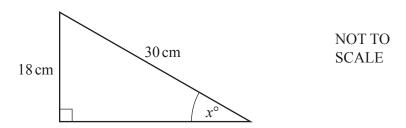
$DF = \dots c$	m	[2
----------------	---	----

23 Simplify  $3x^3 \times 4x^4$ .

.....[2]

Question 24 is printed on the next page.

**24** 



The diagram shows a right-angled triangle.

Show that the value of x is 36.9, correct to 1 decimal place.

[2]

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