Cambridge Assessment International Education

Cambridge IGCSE™

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER				

2650226153

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 π, use either your calculator value or 3.142.

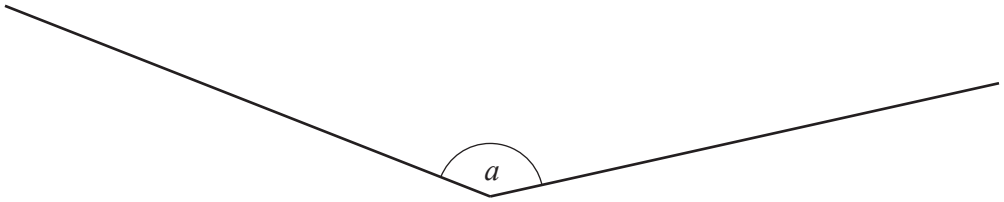
INFORMATION

- 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.

© UCLES 2021

1



(a) Measure angle a.

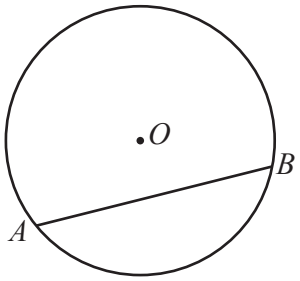
..... [1]

(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.

..... [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]

4 Write as a fraction in its simplest form.

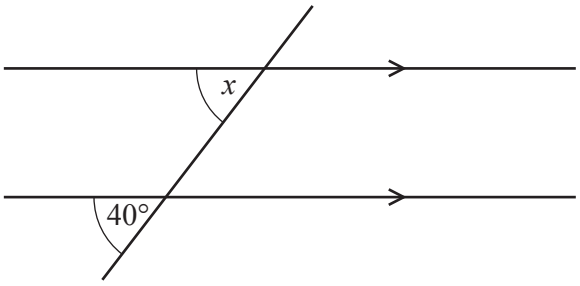
(a) 72%

..... [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.

$x = 40°$ because the angles are ..... [1]

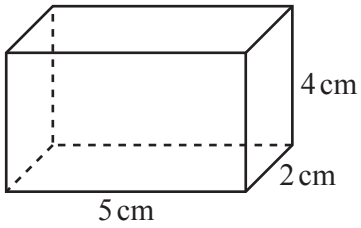
6

18 28 7 15 41 19 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^2 grid, draw a net of this box.

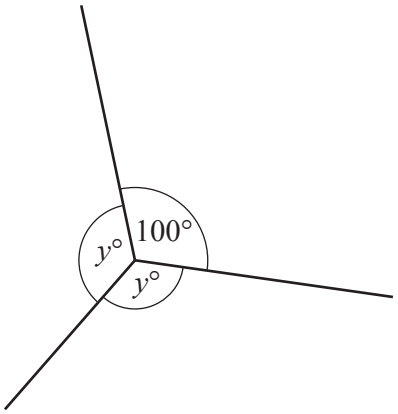
[3]

(b) The outside of the box is painted.

Work out the total area that is painted.

..... cm^2 [2]

8



NOT TO SCALE

Find the value of y.

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

9 12 18 29 49 91 125

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) $8\mathbf{b}$

$\begin{pmatrix} \quad \\ \quad \end{pmatrix}$ [1]

(ii) $\mathbf{a} - \mathbf{b}$

$\begin{pmatrix} \quad \\ \quad \end{pmatrix}$ [1]

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

Find the coordinates of point M.

(..... , ...) [1]

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]

© UCLES 2021

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	

Complete the table.

[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.

£ ..... [2]

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

Find how many sides this polygon has.

..... [1]

15 Expand and simplify.

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

..... [2]

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

..... [3]

17 These are the first four terms of a sequence.

7 11 15 19

Find the nth term.

..... [2]

18 **(a)** Calculate the volume of a cylindrical vase with radius 14.2 cm and height 18 cm.

..... cm^3 [2]

(b) Change your answer to **part (a)** into litres.

..... litres [1]

19 **(a)** Write 0.000 74 in standard form.

..... [1]

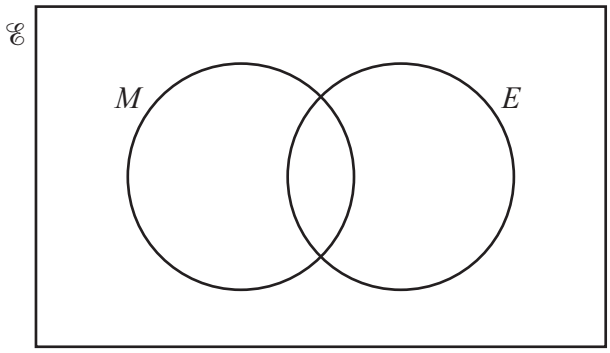
(b) Calculate $4.6 \times 10^2 \times 6.7 \times 10^5$.
Give your answer in standard form, correct to 2 significant figures.

..... [2]

© UCLES 2021

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.

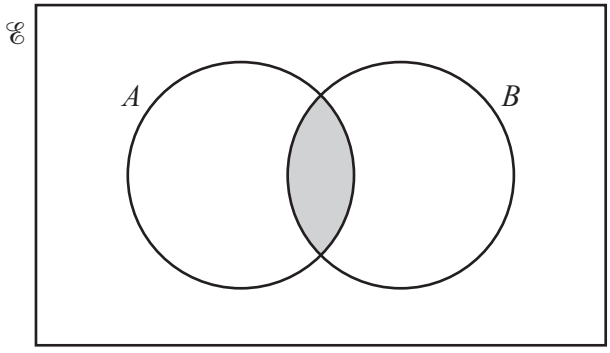


(i) Complete the Venn diagram. [3]

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

..... [1]

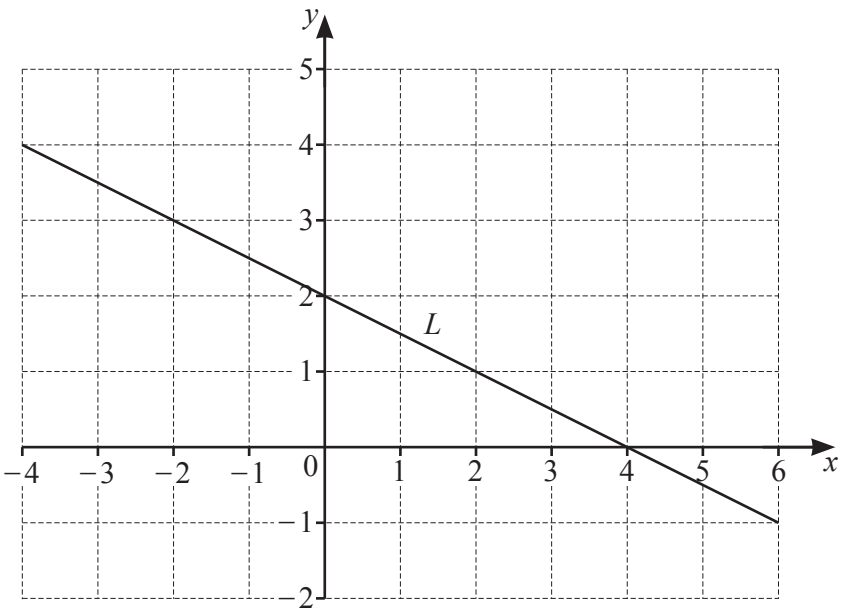
(b)



Use set notation to describe the shaded region.

..... [1]

21 (a)



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

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

(b) Find the equation of the line which is

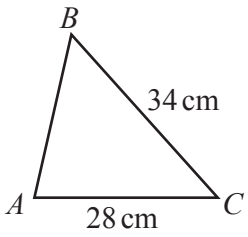
- parallel to the line $y = 3x - 5$

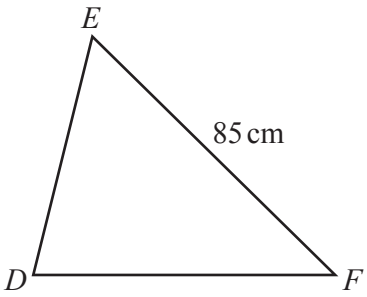
and

- passes through the point (0, 17).

..... [1]

22





NOT TO SCALE

Triangle ABC is similar to triangle DEF.

Calculate DF.

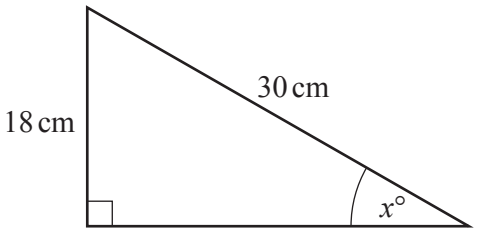
$DF =$ ..... cm [2]

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

..... [2]

Question 24 is printed on the next page.

24



NOT TO SCALE

The diagram shows a right-angled triangle.

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

[2]

Permission to reproduce items where third-party owned material protected by copyright is included has been sought and cleared where possible. Every reasonable effort has been made by the publisher (UCLES) to trace copyright holders, but if any items requiring clearance have unwittingly been included, the publisher will be pleased to make amends at the earliest possible opportunity.

To avoid the issue of disclosure of answer-related information to candidates, all copyright acknowledgements are reproduced online in the Cambridge Assessment International Education Copyright Acknowledgements Booklet. This is produced for each series of examinations and is freely available to download at www.cambridgeinternational.org after the live examination series.

Cambridge Assessment International Education is part of the Cambridge Assessment Group. Cambridge Assessment is the brand name of the University of Cambridge Local Examinations Syndicate (UCLES), which itself is a department of the University of Cambridge.

© UCLES 2021