Cambridge IGCSE

Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

CANDIDATE NAME	
CENTRE NUMBER	
CANDIDATE NUMBER	

7869038818

MATHEMATICS **0580/11**

Paper 1 (Core) **May/June 2017**

1 hour

Candidates answer on the Question Paper.

Additional Materials: Electronic calculator
Tracing paper (optional)
Geometrical instruments

READ THESE INSTRUCTIONS FIRST

Write your Centre number, candidate number and name on all the work you hand in.
Write in dark blue or black pen.
You may use an HB pencil for any diagrams or graphs.
Do not use staples, paper clips, glue or correction fluid.
DO **NOT** WRITE IN ANY BARCODES.

Answer **all** questions.
If working is needed for any question it must be shown below that question.
Electronic calculators should be used.
If the degree of accuracy is not specified in the question, and if the answer is not exact, give the answer to three significant figures. Give answers in degrees to one decimal place.
For π, use either your calculator value or 3.142.

At the end of the examination, fasten all your work securely together.
The number of marks is given in brackets [ ] at the end of each question or part question.
The total of the marks for this paper is 56.

DC (ST/FD) 130067/2
© UCLES 2017

1 Write, in figures, the number seventy thousand and twenty.

..... [1]

2 Write, as a decimal, the value of 5^{-3}.

..... [1]

3 The thickness of one sheet of paper is 8×10^{-3} cm.

Work out the thickness of 250 sheets of paper.

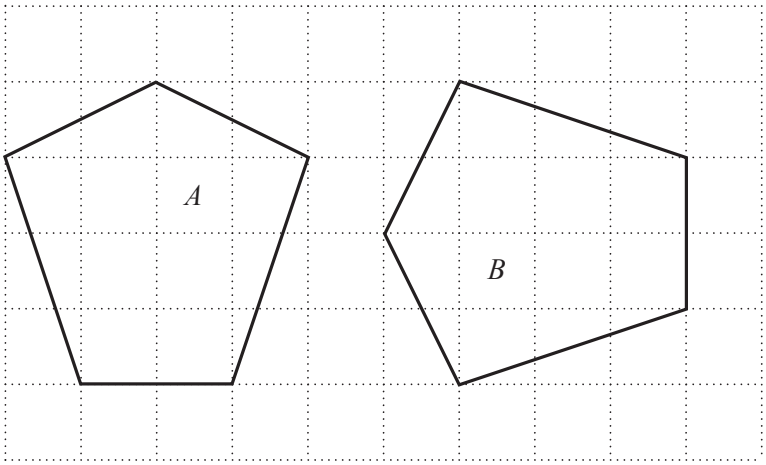
..... cm [1]

4 Simplify.

$(x^2)^5$

..... [1]

5



opposite congruent reflected translated

Choose the mathematical word from the list to complete this statement.

Pentagon A is ..... to pentagon B. [1]

© UCLES 2017

6 31 33 35 37 39

From the list, write down a prime number.

..... [1]

7 Write 23.4571 correct to

(a) 4 significant figures,

..... [1]

(b) the nearest 10.

..... [1]

8 Factorise completely.

$12n^2 - 4mn$

..... [2]

9 Find the highest common factor (HCF) of 126 and 150.

..... [2]

10 The table shows the temperatures in five places at 10 am one day in January.

Place	Temperature (°C)
Helsinki	−7
Chicago	−10
London	3
Moscow	−4
Bangkok	26

(a) Which place was the coldest?

..... [1]

(b) At 2 pm the temperature in Helsinki had increased by 4 °C.

Write down the temperature in Helsinki at 2 pm.

.....°C [1]

11 Expand the brackets and simplify.

$$7(2x+3y)-x(14-y)$$

..... [2]

12 The mass, m kilograms, of an elephant is 3570 kg, correct to the nearest 5 kg.

Complete this statement about the value of m.

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

13 $\mathbf{a} = \begin{pmatrix} 5 \\ -1 \end{pmatrix}$ $\mathbf{b} = \begin{pmatrix} -3 \\ -4 \end{pmatrix}$

Write $\mathbf{a} + 2\mathbf{b}$ as a single vector.

$\begin{pmatrix} \quad \\ \quad \end{pmatrix}$ [2]

14 Manuel changes 5000 Mexican Pesos to dollars.
He receives $336.

Complete this statement about the exchange rate.
Give your answer correct to 2 decimal places.

$1 = ... Mexican Pesos [2]

15 Maria asks 50 students in her school when their birthday is.
She records the information in the table.

	Jan to Mar	Apr to Jun	Jul to Sep	Oct to Dec
Number of birthdays	9	21	14	6

(a) Find the relative frequency of a student having a birthday in April, May or June.

..... [1]

(b) There are 750 students in the school.

Estimate the number of students who have a birthday in April, May or June.

..... [1]

© UCLES 2017

16 Work out $\dfrac{\sqrt[3]{512}}{6^2}$.

Write your answer as a fraction in its lowest terms.

..... [2]

17 $A = 4\pi r^2$

Make r the subject of this formula.

$r =$ ..... [2]

18 **(a)** Work out.

$3 + 2 \times -4$

..... [1]

(b) In each of these, insert one pair of brackets to make the statement correct.

(i) $3 \times 5 + 2 + 2 = 23$ [1]

(ii) $12 \div 4 + 2 = 2$ [1]

© UCLES 2017

19 **Without using a calculator**, work out $1\frac{2}{3}+\frac{5}{7}$.

Write down all the steps of your working and give your answer as a mixed number in its simplest form.

..... [3]

20 Solve the simultaneous equations.
You must show all your working.

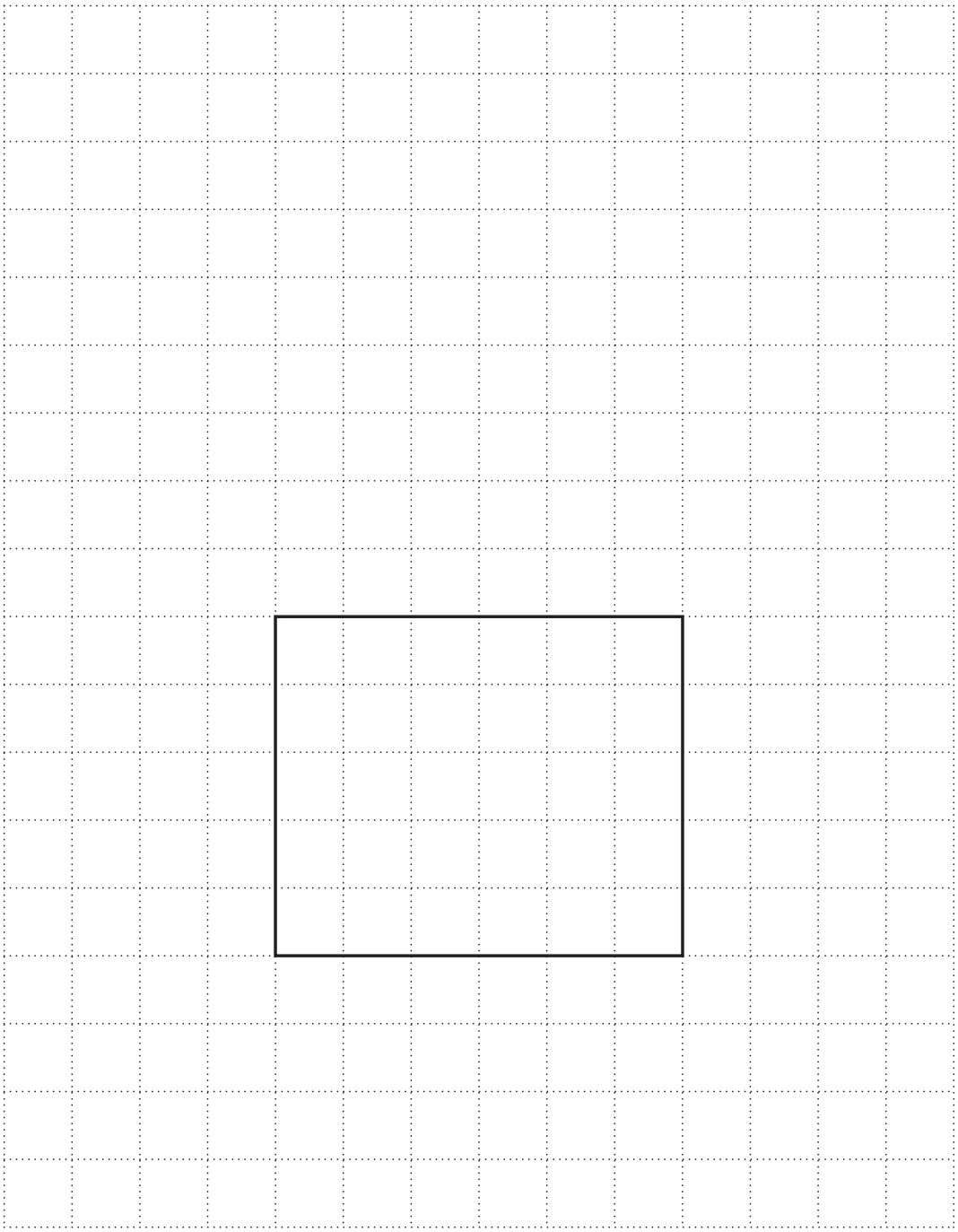
$$5x-2y=24$$
$$7x+4y=-14$$

$x =$ .....

$y =$ ..... [3]

21 A cuboid has length 6 cm, width 5 cm and height 3 cm.

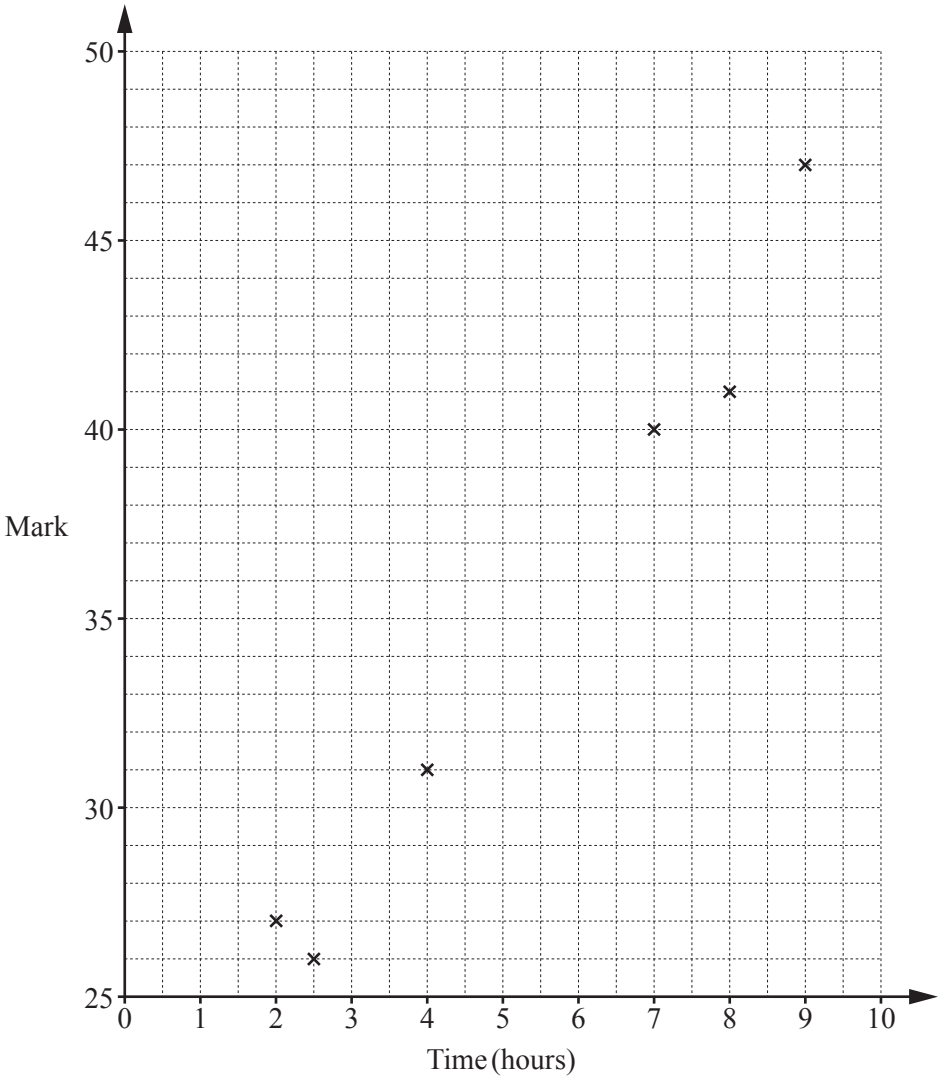
On the 1 cm^2 grid, complete the net of the cuboid.
The base is drawn for you.



[3]

© UCLES 2017

22 Six students revise for a test.
The scatter diagram shows the time, in hours, each student spent revising and their mark in the test.



(a) The data for two more students is shown in the table.

Time (hours)	4.5	6.5
Mark	33	35

Plot these two points on the scatter diagram. [1]

(b) What type of correlation is shown on the scatter diagram?

..... [1]

(c) Draw a line of best fit on the scatter diagram. [1]

(d) Another student spent 5.5 hours revising.

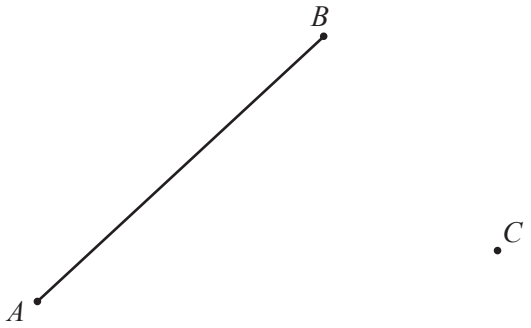
Estimate a mark for this student.

..... [1]

© UCLES 2017

[Turn over

23



The diagram shows the positions of three points, A, B and C.

(a) **Using a ruler and compasses only**, construct

(i) the perpendicular bisector of the line AB, [2]

(ii) the locus of all points that are 3 cm from C. [2]

(b) Shade the region that is

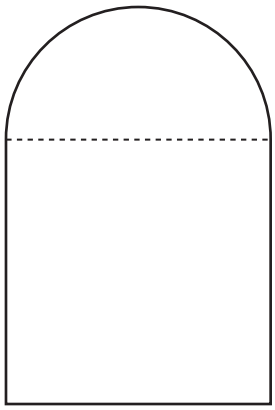
- closer to A than to B

and

- less than 3 cm from C. [1]

© UCLES 2017

24 The diagram shows a notice board.



NOT TO SCALE

The board is in the shape of a semicircle joined to a square with side 74 cm.

(a) Calculate

(i) the perimeter of the board,

..... cm [3]

(ii) the area of the board.

.....cm^2 [3]

(b) The board is a prism that is 5 cm thick.

Calculate the volume of the board.

.....cm^3 [1]

© UCLES 2017

BLANK PAGE

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 International Examinations Copyright Acknowledgements Booklet. This is produced for each series of examinations and is freely available to download at www.cie.org.uk after the live examination series.

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