Cambridge IGCSE

Cambridge Assessment International Education
Cambridge International General Certificate of Secondary Education

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER				

MATHEMATICS **0580/13**

Paper 1 (Core) **May/June 2019**

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.

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1 Write 3.058 correct to 3 significant figures.

View solution

..... [1]

2 Write 0.45 as a fraction in its simplest form.

View solution

..... [1]

3 Factorise $2x^2 - x$.

View solution

..... [1]

4 Find the co-ordinates of the point where the line $y = 3x - 8$ crosses the y-axis.

View solution

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

5 Giulio's reaction times are measured in two games.
In the first game his reaction time is $\frac{1}{3}$ of a second.
In the second game his reaction time is $\frac{1}{8}$ of a second.

Find the difference between the two reaction times.

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..... s [1]

6 The probability that Alex wins a prize is 0.27 .

Find the probability that Alex does not win a prize.

View solution

..... [1]

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7 The table shows the different methods of travel for 20 people going to work.

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Method of travel	Frequency
Car	10
Walk	5
Bike	3
Bus	2

Which type of average, mean, median or mode, can be used for this information?

..... [1]

8 Calculate.

(a) $-12 \div -2$

View solution

..... [1]

(b) $\sqrt[3]{2^3 + 2}$

View solution

..... [1]

9 Simplify.

$$4x - 12y + 10x + 25y$$

View solution

..... [2]

10 Here is a list of numbers.

$$21 \qquad \frac{2}{3} \qquad \sqrt{13} \qquad 31 \qquad \sqrt{121} \qquad 51 \qquad 0.7$$

From this list, write down

(a) a prime number,

View solution

..... [1]

(b) an irrational number.

View solution

..... [1]

11 $\mathbf{p} = \begin{pmatrix} 5 \\ 0 \end{pmatrix}$ $\mathbf{q} = \begin{pmatrix} 1 \\ 6 \end{pmatrix}$

View solution

Work out $2\mathbf{p} + 3\mathbf{q}$.

( ) [2]

12 Write down the type of correlation you would expect for the following.

(a) The average speed of a train and the time taken for a journey.

View solution

..... [1]

(b) The distance travelled by a car and the amount of fuel used.

View solution

..... [1]

13 The scale drawing shows a rock, *R*.
The scale is 1 centimetre represents 30 metres.
A lighthouse, *L*, is 210 m from *R*, on a bearing of 125°.

View solution

On the diagram, mark the position of *L*.



Scale : 1 cm to 30 m

[2]

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14 Rearrange $2(w+h)=P$ to make w the subject.

View solution

$w =$ ..... [2]

15 Genaro measures the length, l cm, of his desk as 120 cm, correct to the nearest centimetre.

View solution

Complete the statement about the value of l.

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

16 Solve.

$$7x-5=16$$

View solution

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

17 **Without using a calculator**, work out $\frac{12}{35}\times\frac{7}{9}$.

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

..... [2]

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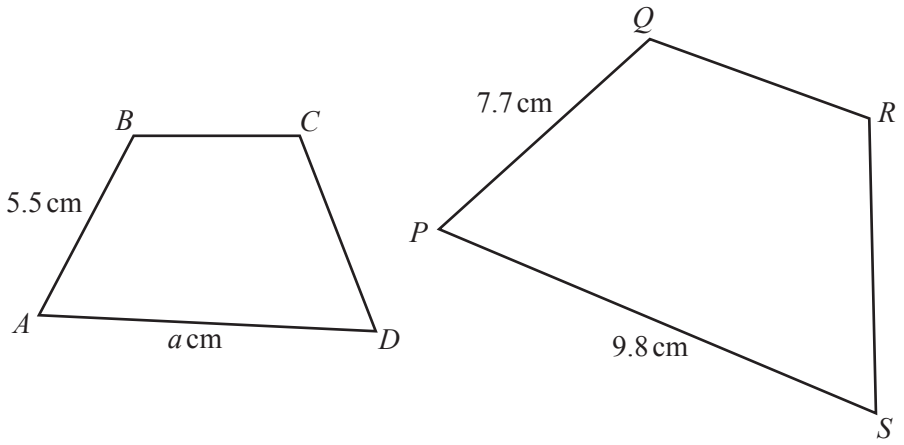
18

View solution



NOT TO SCALE

Shape *ABCD* is similar to shape *PQRS*.

Work out the value of *a*.

a = ... [2]

19 Harry invests $800 for 2 years at a rate of 3% per year compound interest.

View solution

Calculate the amount of interest he receives at the end of the 2 years.

$ ..... [3]

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

View solution

$$5x - 2y = 26$$
$$7x + 6y = 10$$

$x =$ .....

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

21 **(a)** Write down the next term in each sequence.

View solution

(i) 12, 7, 2, −3, −8, ... [1]

(ii) 4, 7, 13, 25, 49, ... [1]

(b) Find an expression, in terms of n, for the nth term of this sequence.

View solution

5, 8, 11, 14, …

..... [2]

22 A closed box in the shape of a cuboid has length 5 cm, width 4 cm and height 2 cm.

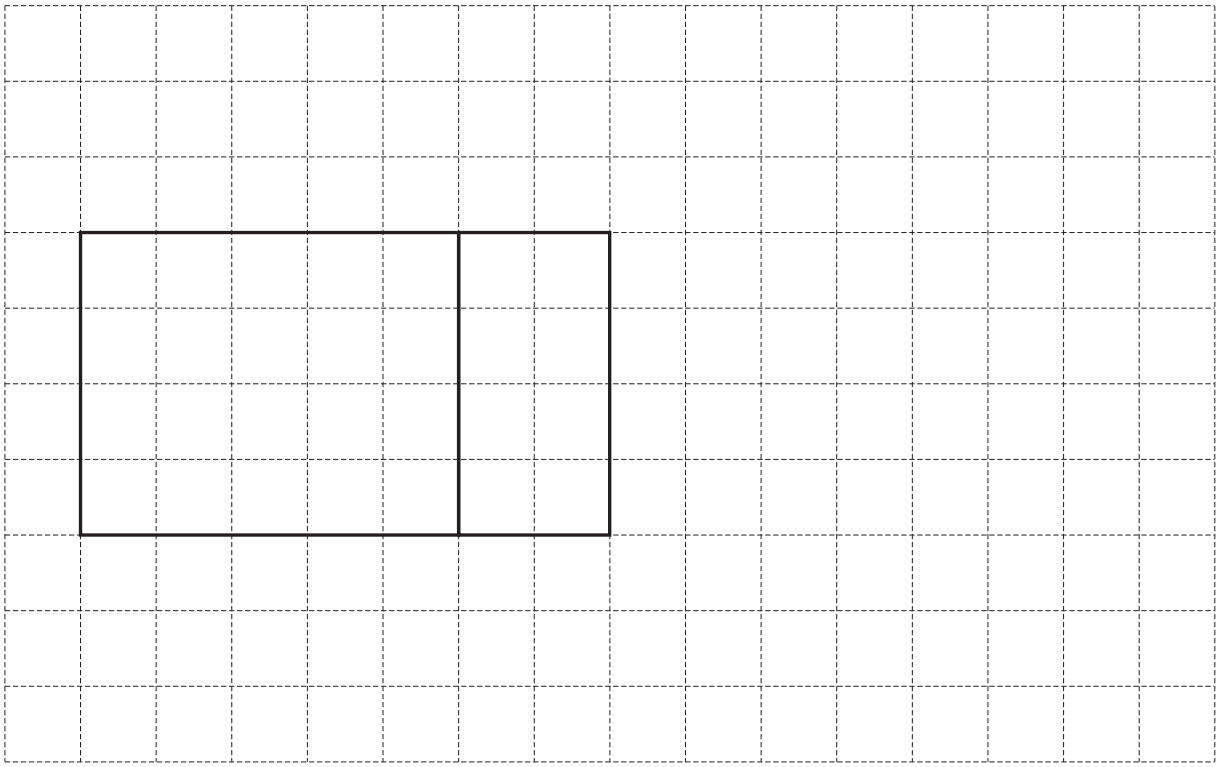
(a) Calculate the volume of the box.

View solution

..... cm^3 [2]

(b) On the 1 cm^2 grid, complete the net of this box.

View solution



[2]

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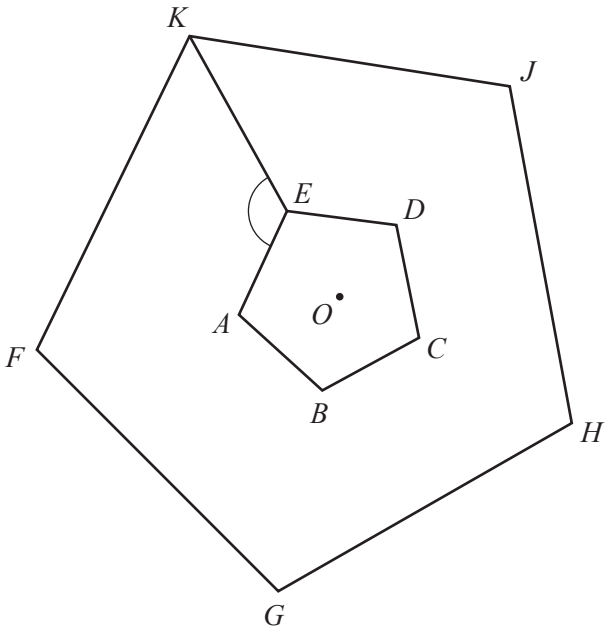
23

View solution



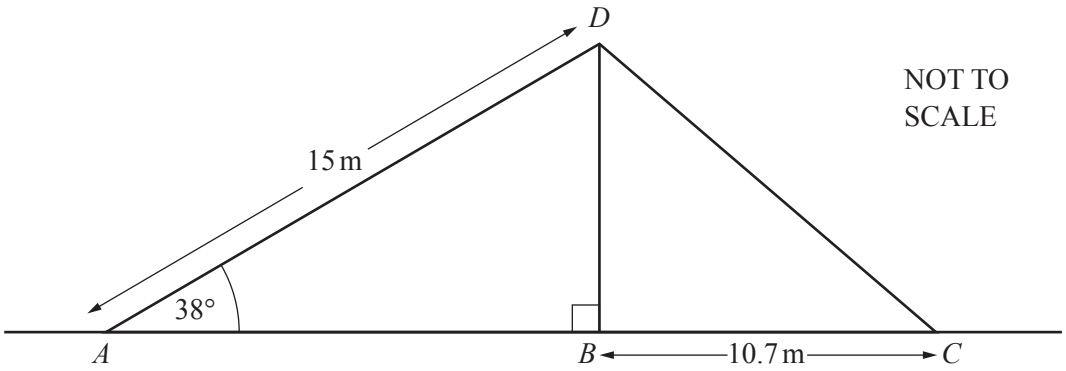
NOT TO SCALE

The diagram shows two regular pentagons.
Pentagon *FGHJK* is an enlargement of pentagon *ABCDE*, centre *O*.

Find angle *AEK*.

Angle *AEK* = ... [4]

24



A vertical flagpole, BD, stands on horizontal ground and is held by two ropes, AD and CD.
$AD = 15\,\text{m}$, $BC = 10.7\,\text{m}$ and angle $DAB = 38°$.

(a) Using trigonometry, calculate BD.

View solution

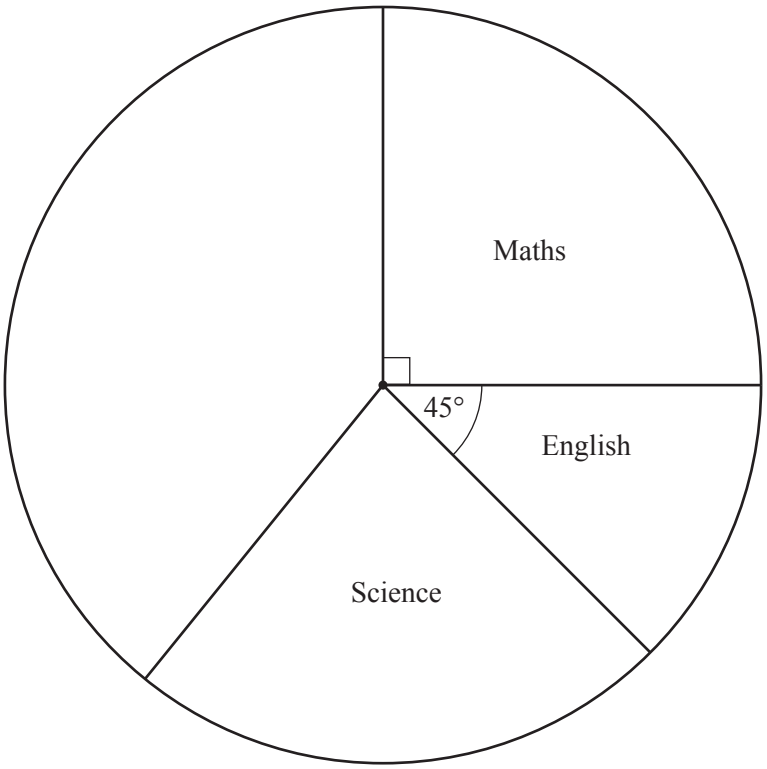
$BD =$ ..... m [2]

(b) Calculate CD.

View solution

$CD =$ ..... m [2]

25 Jason spends 480 minutes at school each day.
The pie chart shows the time he spends in three of his lessons.



(a) Measure the sector angle for science.

View solution

..... [1]

(b) Work out the time, in minutes, Jason spends in English.

View solution

.....min [2]

(c) Jason spends 100 minutes in geography and the rest of the day is free time.

View solution

Complete the pie chart.

[2]

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