Cambridge IGCSE

Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

CANDIDATE NAME

CENTRE NUMBER

CANDIDATE NUMBER

1659043106

MATHEMATICS **0581/13**

Paper 1 (Core) **May/June 2014**

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.

This document consists of **11** printed pages and **1** blank page.

CAMBRIDGE International Examinations

[Turn over

1

–3°C 8°C –19°C 42°C –7°C

Write down the lowest temperature from this list.

Answer ..... °C [1]

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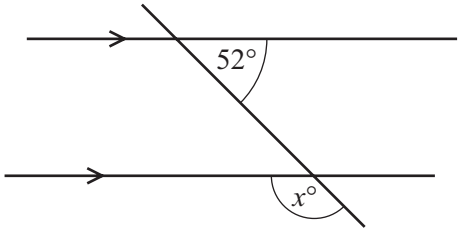
2 Change 6450 cm into metres.

Answer ..... m [1]

3



NOT TO SCALE

In the diagram, a straight line intersects two parallel lines.

Find the value of x.

Answer x = ... [1]

---

4 Calculate.

$$\frac{56.2 - 34.8}{-0.2}$$

Answer ..... [1]

---

5 Write down the value of 7^0.

Answer ..... [1]

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6 Write 45 000 in standard form.

Answer ..... [1]

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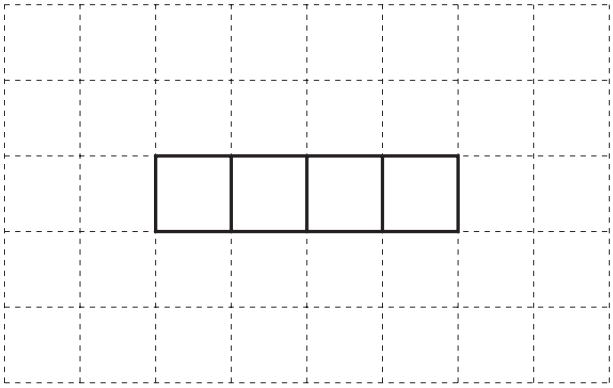
7 Four faces of a cube are drawn on the grid.

Complete the net of this cube.



[1]

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8 Write down all the prime numbers that are greater than 30 and less than 40.

Answer ..... [1]

---

9 $\mathbf{a} = \begin{pmatrix} -3 \\ 4 \end{pmatrix}$ $\mathbf{b} = \begin{pmatrix} 2 \\ 6 \end{pmatrix}$

Write each of the following as a single vector.

(a) $2\mathbf{a}$

Answer(a) $\begin{pmatrix} \quad \\ \quad \end{pmatrix}$ [1]

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

Answer(b) $\begin{pmatrix} \quad \\ \quad \end{pmatrix}$ [1]

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10 **(a)**

1 4 8 12 27 40

Write down the number from this list which is both a cube number and has a factor of 4.

Answer(a) ..... [1]

(b) 1258 is a multiple of 34.

Write down a different multiple of 34 between 1200 and 1300.

Answer(b) ..... [1]

11

–3 –5 1 0 3

Three different numbers from the list are added together to give the smallest possible total.

Complete the sum below.

..... + ... + ... = ...

[2]

---

12 The area of a square is 36 cm^2.

Calculate the perimeter of this square.

Answer ..... cm [2]

---

13 The mean of five numbers is 6.
Four of the numbers are 3, 4, 5, and 10.

Work out the number that is missing from the list.

Answer ..... [2]

---

14 Find the value of $3a - 5b$ when $a = -4$ and $b = 2$.

Answer ..... [2]

---

15 Celine buys a bag of 24 tulip bulbs.
There are 8 red bulbs and 5 white bulbs.
All of the other bulbs are yellow.

Celine chooses a bulb at random from the bag.

(a) Write down the probability that the bulb is red or white.

Answer(a) ..... [1]

(b) Write down the probability that the bulb is yellow.

Answer(b) ..... [1]

---

16 Find the fraction that is half-way between $\frac{1}{2}$ and $\frac{2}{3}$.

Answer ..... [2]

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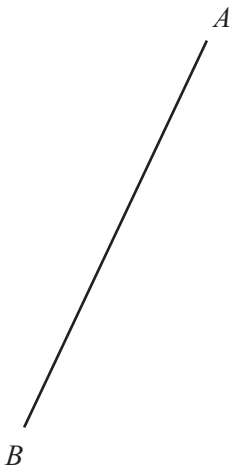
17 **Using a straight edge and compasses only**, construct the perpendicular bisector of AB.
All construction arcs must be clearly shown.



[2]

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18 Michelle sells ice cream.
The table shows how many of the different flavours she sells in one hour.

Flavour	Vanilla	Strawberry	Chocolate	Mango
Number sold	6	8	9	7

Michelle wants to show this information in a pie chart.

Calculate the sector angle for mango.

Answer ..... [2]

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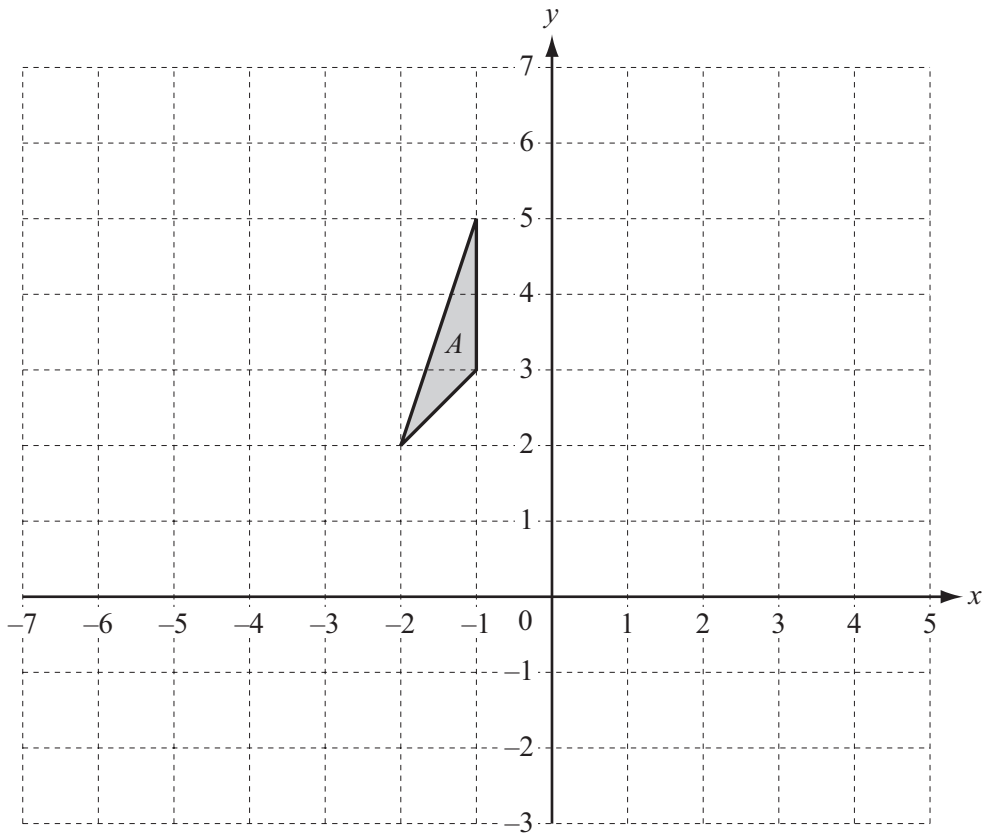
19 Chris changes \$1350 into euros (€) when €1 = \$1.313 .

Calculate how much he receives.

Answer €..... [2]

20



Draw the image of triangle A after a translation by the vector $\begin{pmatrix} 3 \\ -4 \end{pmatrix}$. [2]

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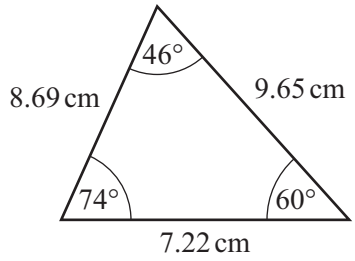
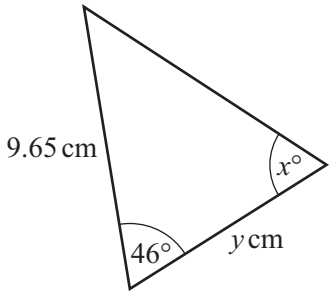
21 Each exterior angle of a regular polygon is 30°.

Work out the number of sides the polygon has.

Answer ..... [2]

22





NOT TO SCALE

These two triangles are congruent.
Write down the value of

(a) x,

Answer(a) x = ... [1]

(b) y.

Answer(b) y = ... [1]

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23 Without using a calculator, work out $1\frac{1}{4} - \frac{7}{9}$.

Write down all the steps in your working.

Answer ..... [3]

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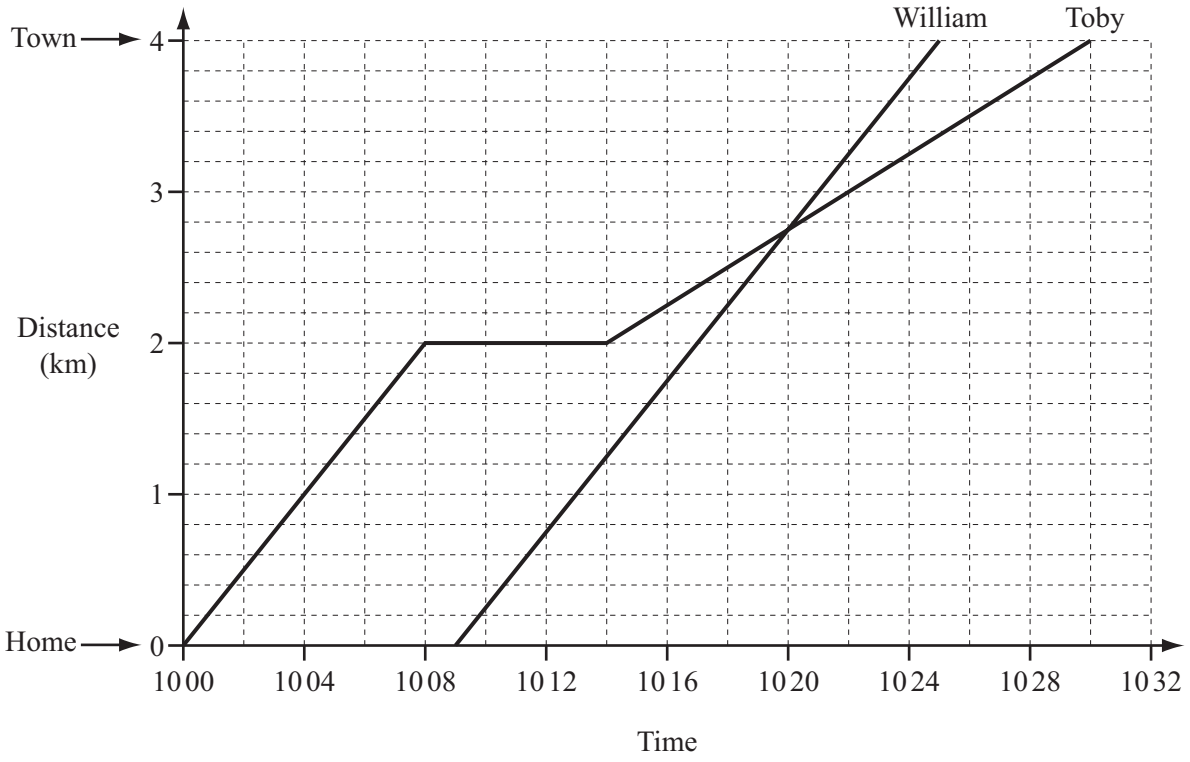
24 Solve the simultaneous equations.

$$2x + 3y = 29$$
$$5x + y = 27$$

Answer $x =$ .....

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

25



Toby and William cycled into town.
Their journeys are shown on the travel graph.

(a) For how many minutes did Toby stop on his journey into town?

Answer(a) ..... min [1]

(b) Explain what happened at 1020.

Answer(b) ..... [1]

(c) Work out how long William took to cycle into town.

Answer(c) ..... min [1]

(d) Calculate William's speed in km/h.

Answer(d) ..... km/h [2]

26 **(a)** Factorise completely.

$$15a^3 - 5ab$$

Answer(a) ..... [2]

(b) Simplify.

$$3x^2y^3 \times x^4y$$

Answer(b) ..... [2]

(c) Multiply out the brackets and simplify.

$$3(x - 2) - 4(2x - 3)$$

Answer(c) ..... [2]

(d) Solve the equation.

$$8x + 9 = 3(x + 8)$$

Answer(d) $x =$ ..... [3]

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