Cambridge IGCSE

**Cambridge International Examinations**
Cambridge International General Certificate of Secondary Education

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| CANDIDATE NAME | | | | | | | | | |
| CENTRE NUMBER | | | | | | CANDIDATE NUMBER | | | | |

**MATHEMATICS** **0580/12**

Paper 1 (Core) **October/November 2015**

**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 $\pi$, 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.

The syllabus is approved for use in England, Wales and Northern Ireland as a Cambridge International Level 1/Level 2 Certificate.



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CAMBRIDGE International Examinations

**1** Write down the difference in temperature between 8°C and −9°C.

View solution

*Answer* .....°C [1]

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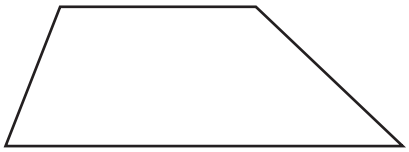
**2**

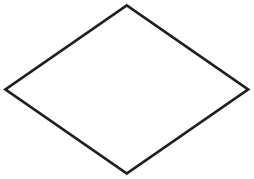
View solution



Parallelogram



Trapezium



Rhombus

Write down which one of these shapes has

- rotational symmetry of order 2

**and**

- no line symmetry.

*Answer*..... [1]

---

**3** Write down the number in this list that is irrational.

View solution

$1.2 \times 10^{-3}$ $\sqrt{3}$ $\frac{5}{7}$ –36.2 47.35%

*Answer*..... [1]

---

**4** Show that $0.3 \neq \frac{1}{3}$.

View solution

*Answer*

[1]

---

**5** Write 1426.3075 correct to

**(a)** 2 decimal places,

View solution

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

**(b)** 2 significant figures.

View solution

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

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**6** $2600 is invested for 5 years at a rate of 4% per year simple interest.

View solution

Calculate the total interest at the end of the 5 years.

*Answer* $ ..... [2]

---

**7** Carlos changed $950 into euros (€) when the exchange rate was €1 = $1.368 .

View solution

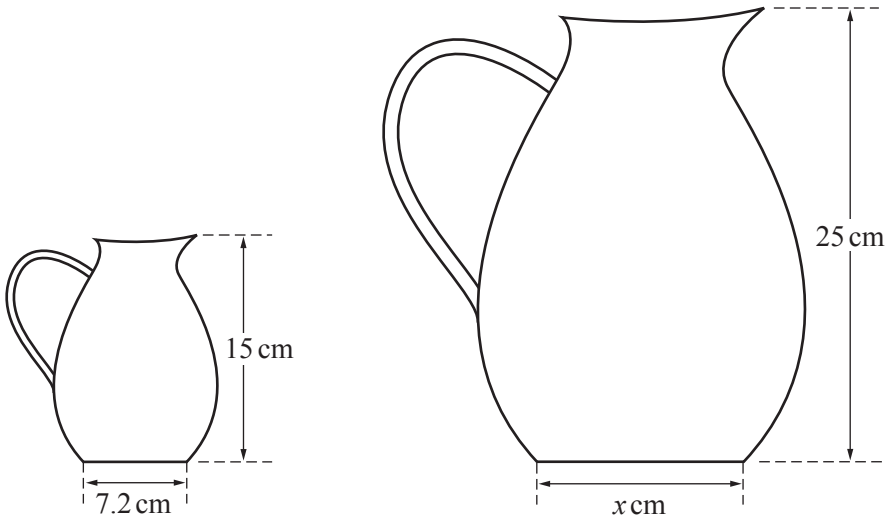
Calculate how many euros Carlos received.

*Answer* € ..... [2]

---

**8**

View solution




The diagram shows two jugs that are mathematically similar.

Find the value of $x$.

*Answer* $x$ = ..... [2]

---

**9**

$$-1, \quad 3, \quad 7, \quad 11, \quad .....$$

View solution

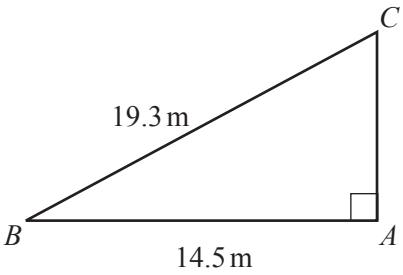
Write down the $n$th term for this sequence.

*Answer* ..... [2]

---

**10**

View solution




NOT TO SCALE

Use trigonometry to calculate angle $ACB$.

*Answer* Angle $ACB$ = ..... [2]

---

**11** **(a)** Solve.

$$3x^2 = 108$$

View solution

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

**(b)** $w^6 \times w^k = w^{18}$

View solution

Find the value of $k$.

*Answer(b)* $k$ = ..... [1]

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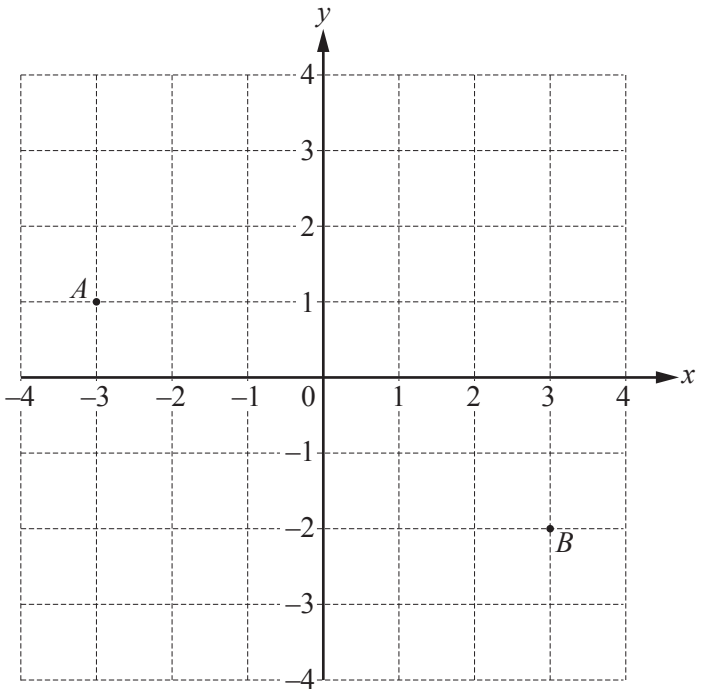
**12 (a)**

View solution




Points $A$ and $B$ are shown on the grid.

Write $\overrightarrow{AB}$ as a column vector.

*Answer(a)* $\overrightarrow{AB} = \begin{pmatrix} \quad \\ \quad \end{pmatrix}$ [1]

**(b)** $\overrightarrow{CD} = \begin{pmatrix} 5 \\ -7 \end{pmatrix}$

View solution

Write $\overrightarrow{DC}$ as a column vector.

*Answer(b)* $\overrightarrow{DC} = \begin{pmatrix} \quad \\ \quad \end{pmatrix}$ [1]

---

**13** Rearrange the formula to make $y$ the subject.

View solution

$$R = \frac{ty}{4}$$

*Answer* $y =$ ..... [2]

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**14** **(a)** Write down the number in the list below that has the same value as $\frac{5}{8}$.

View solution

$\frac{3}{5}$ 0.58 $\frac{25}{64}$ $\frac{55}{80}$ 62.5%

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

**(b)** Find $\frac{5}{8}$ of \$208.56 .

View solution

*Answer(b)* \$..... .[1]

---

**15** Construct a triangle with sides of length 55 mm, 68 mm and 85 mm.

View solution

The 85 mm side has been drawn for you.

[2]

---

**16** Fruit juice costs \$1.27 per litre and rice costs \$1.68 per kilogram.

View solution

Work out the total cost of 4 litres of fruit juice and 3.5 kilograms of rice.

*Answer* \$..... [3]

---

**17** Jason receives some money for his birthday.
He spends $\frac{11}{15}$ of the money and has \$14.40 left.

View solution

Calculate how much money he received for his birthday.

*Answer* \$ ..... [3]

---

**18** The table shows information about the numbers of pets owned by 24 students.

View solution

| Number of pets | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|---|
| Frequency | 1 | 2 | 3 | 5 | 7 | 3 | 3 |

Calculate the mean number of pets.

*Answer* ..... [3]

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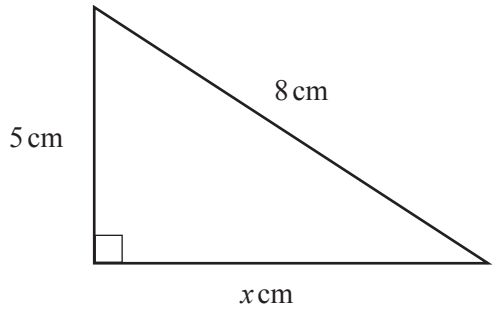
**19**

View solution




NOT TO SCALE

Calculate the value of $x$.

*Answer* $x$ = ..... [3]

---

**20** Without using your calculator, work out $2\frac{1}{4} - \frac{11}{12}$.

View solution

You must show all your working and give your answer as a fraction in its lowest terms.

*Answer* ..... [3]

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**21** Write down a set of five numbers that has

- a mode of 3

**and**

- a median of 6

**and**

- a range of 5.

View solution

*Answer* ....., ....., ....., ....., ..... [3]

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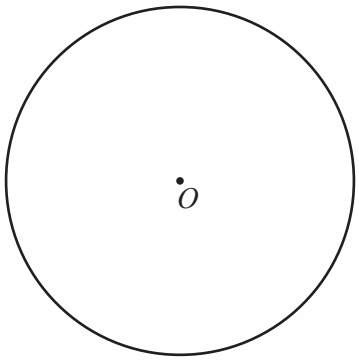
**22** **(a)**

View solution




*O* is the centre of the circle.

Measure the diameter of this circle.
Give your answer in millimetres.

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

**(b)** A circular dinner plate has radius 12.7 cm.

View solution

Work out the area of the plate.

*Answer(b)* ..... $cm^2$ [2]

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**23** **(a)** Expand.

$$-4(2w-5)$$

View solution

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

**(b)** Factorise.

$$6x^2 - x$$

View solution

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

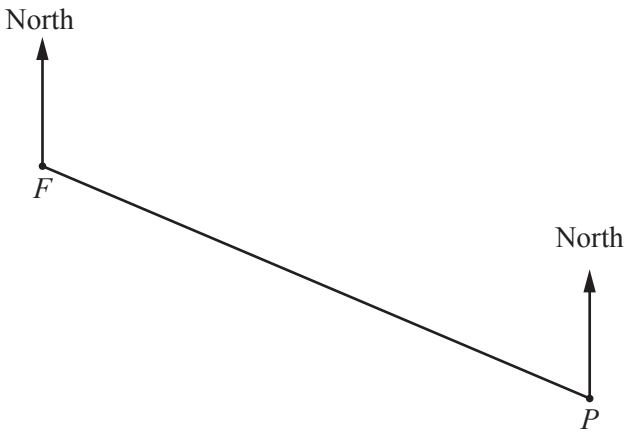
**(c)** $A = 2pq + 3pr$

View solution

Find $A$ when $p = 7$, $q = 5$ and $r = -2$.

*Answer(c)* $A =$ ..... [2]

**24** The scale drawing shows the positions in a town of the Police station, $P$, and the Fire station, $F$.
The scale is 1 centimetre represents 40 metres.




Scale: 1 cm to 40 m

**(a)** Measure the bearing of $P$ from $F$.

View solution

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

**(b)** Find the actual distance from $F$ to $P$.

View solution

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

**(c)** The Ambulance station, $A$, is on a bearing of 236° from $F$.

View solution

Work out the bearing of $F$ from $A$.

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

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