UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
International General Certificate of Secondary Education

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER				

0071500794

MATHEMATICS **0580/12**

Paper 1 (Core) **May/June 2013**

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 a pencil for any diagrams or graphs.
Do not use staples, paper clips, highlighters, 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.

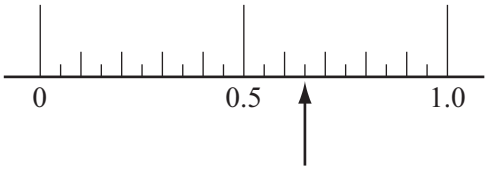
At the end of the examination, fasten all your work securely together.
The number of marks is given in brackets [ ] at the end of each question or part question.
The total of the marks for this paper is 56.

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

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1



Write down the number the arrow points to on the scale.

Answer ..... [1]

2

100 164 200 343 999

Write down the cube number from this list.

Answer ..... [1]

---

3 Write down the next prime number after 23.

Answer ..... [1]

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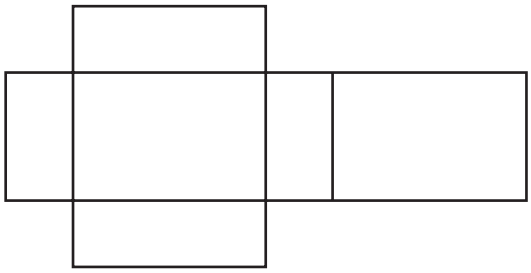
4 Calculate the number of seconds in 3 hours.

Answer ..... s [1]

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5



The diagram shows the net of a solid.

Write down the mathematical name of this solid.

Answer ..... [1]

---

6 Bryony asks her friends how many pets they have.
She is going to use this table to record her results.

Number of pets	Frequency
0 – 1	
1 – 2	
2 – 3	
3 or more	

Explain what is wrong with this frequency table.

Answer .....

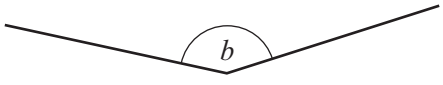
..... [1]

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7 **(a)** Draw an acute angle.
Label the acute angle with the letter *a*.

[1]

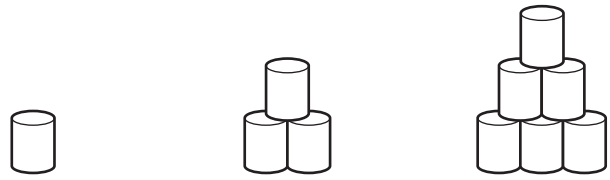
(b) Write down the mathematical name of angle *b*.



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

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8



1 row 2 rows 3 rows

Complete the table for 4 rows and 5 rows.

Number of rows	1	2	3	4	5
Number of cans	1	3	6		

[2]

---

9 The probability that the school hockey team will win its next match is 0.45 .
The probability that it will lose its next match is 0.3 .

Work out the probability that the school hockey team will draw its next match.

Answer ..... [2]

10

$$\mathbf{a} = \begin{pmatrix} 4 \\ 7 \end{pmatrix} \qquad \mathbf{b} = \begin{pmatrix} -5 \\ 2 \end{pmatrix}$$

Write each of the following as a single vector.

(a) 6**a**

Answer(a) ( ) [1]

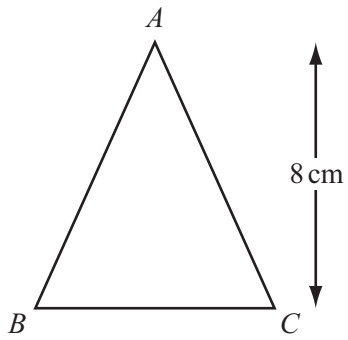
(b) **a** + **b**

Answer(b) ( ) [1]

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NOT TO SCALE

Triangle ABC has a height of 8 cm and an area of 42 cm².

Calculate the length of BC.

Answer BC = ... cm [2]

---

12 **(a)** Use your calculator to work out $\sqrt{65} - 1.7^2$.

Write down all the numbers displayed on your calculator.

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

(b) Write your answer to **part (a)** correct to 2 significant figures.

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

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[Turn over

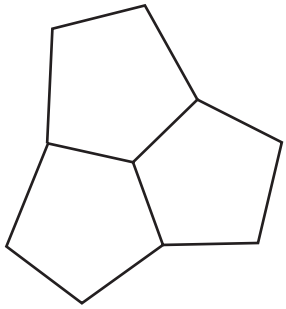
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13 The exterior angle of a regular pentagon is 72°.

(a) Write down the interior angle of a regular pentagon.

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

(b)



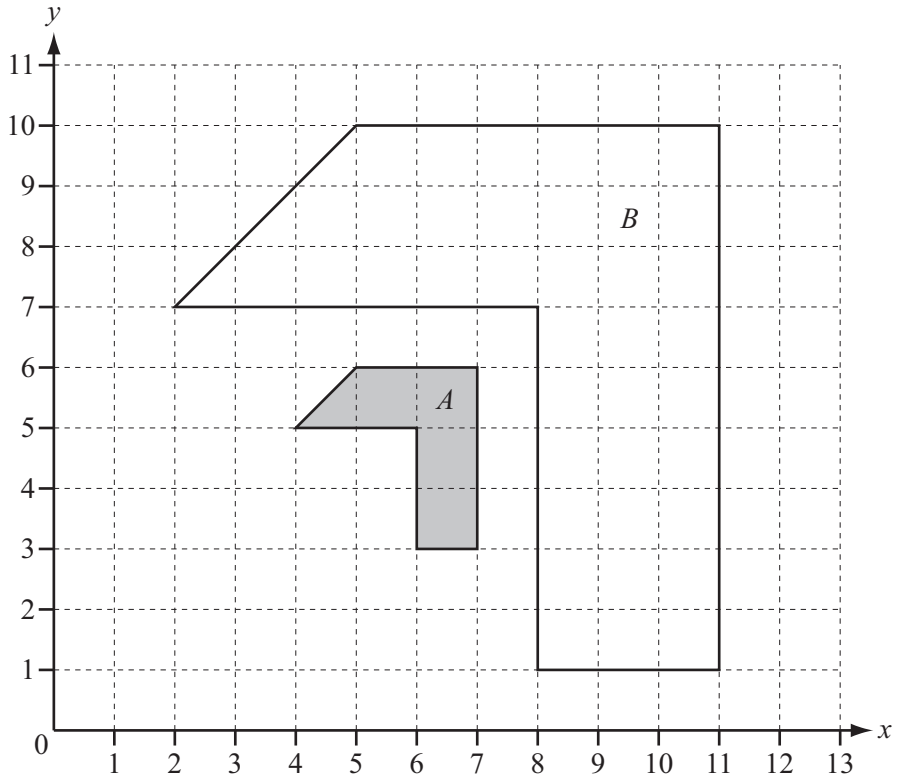
The diagram shows three pentagons which fit together.
Uta thinks that three **regular** pentagons will fit together in the same way.

Explain how you know she is wrong.

Answer(b) .....

..... [1]

14



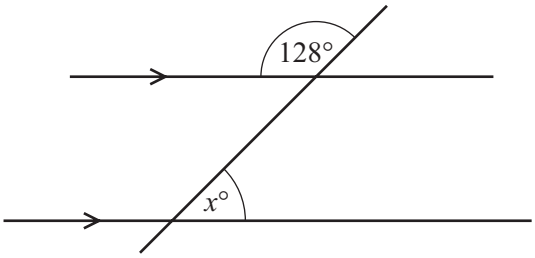
Describe fully the **single** transformation that maps shape *A* onto shape *B*.

Answer ..... [3]

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15 (a)



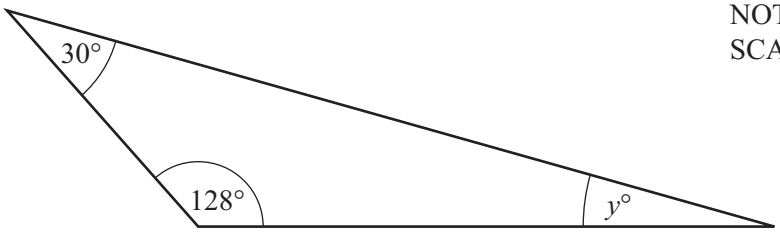
NOT TO SCALE

A straight line intersects two parallel lines as shown.

Find the value of x.

Answer(a) $x =$ ..... [2]

(b)



NOT TO SCALE

Calculate the value of y.

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

---

16 (a) The average distance of the Moon from the Earth is 384 400 km.

Write this distance in standard form.

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

(b) Calculate $(4.3 \times 10^8) + (2.5 \times 10^7)$.

Give your answer in standard form.

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

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[Turn over

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17

$=$ $<$ $>$

Write one of the three symbols between each pair of numbers.

Each symbol can be used more than once.

(a) 30% ..... $\frac{1}{3}$ [1]

(b) -2 ..... -3 [1]

(c) π ..... $\sqrt{10}$ [1]

---

18 (a)

–3 –4 –7 2 5

Choose three different numbers from the list to complete this calculation.

..... + ... + ... = **–6** [1]

(b) Find the value of $5x - 3y$ when $x = -2$ and $y = 4$.

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

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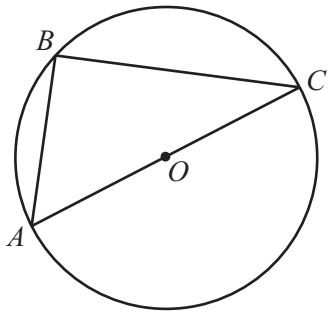
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19 Without using a calculator, work out $\frac{6}{7} \div 1\frac{2}{3}$.

Write down all the steps in your working.

Answer ..... [3]

20



NOT TO SCALE

A, *B* and *C* are points on the circumference of a circle centre *O*.
AC is a straight line.

(a) Explain why angle *ABC* is 90°.

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

(b) The **diameter** of the circle is 3 cm.

Calculate the area of this circle.

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

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21 Carol invests \$6250 at a rate of 2% per year compound interest.

Calculate the **total** amount Carol has after 3 years.

Answer \$ ..... [3]

---

22 Solve the equation.

$$5(2y - 17) = 60$$

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

---

23 **(a)** Simplify y^0.

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

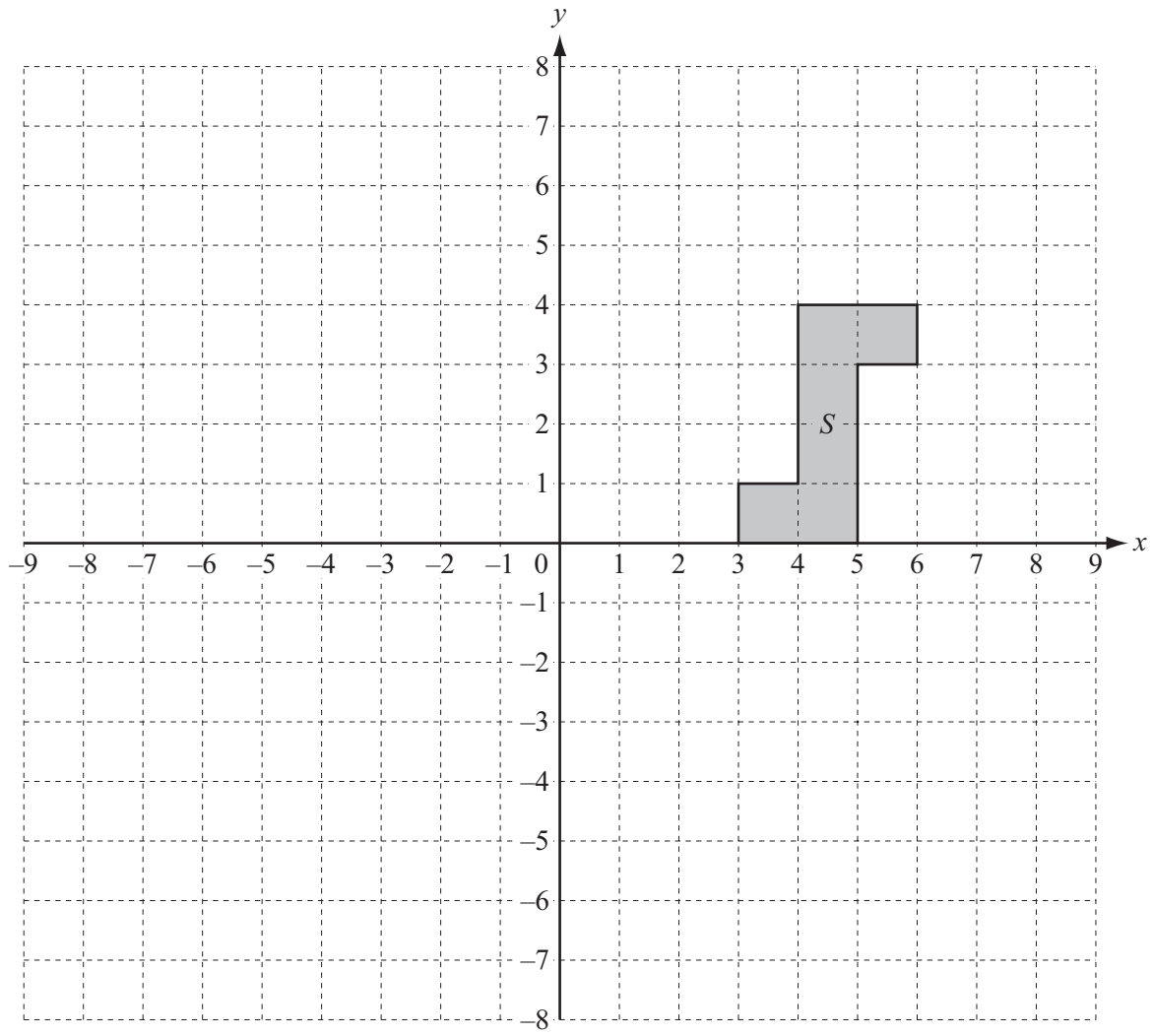
(b) Make v the subject of $E = \frac{1}{2}mv^2$.

Answer(b) $v =$ ..... [3]

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(a) On the grid

(i) plot the point $(-5, -2)$ and label it P, [1]

(ii) draw the line $y = 2x$. [1]

(b) (i) Write down the order of rotational symmetry of shape S.

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

(ii) Draw the image of shape S after a rotation through 90° clockwise about $(0, 0)$. [2]

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