Cambridge IGCSE

Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER				

5594379073

MATHEMATICS **0580/12**

Paper 1 (Core) **October/November 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.

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

This document consists of **10** printed pages and **2** blank pages.

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1 Insert **one pair** of brackets only to make the following statement correct.

$$6 + 5 \times 10 - 8 = 16$$

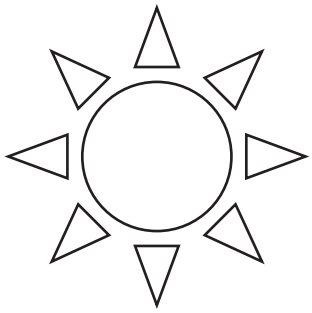
[1]

---

2 Calculate $\dfrac{8.24 + 2.56}{1.26 - 0.72}$.

Answer ..... [1]

3



Write down the order of rotational symmetry of this shape.

Answer ..... [1]

---

4 **(a)** Write down two whole numbers that have a product of –15.

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

(b) During one year, the temperature in Ulaanbaatar varied from –33 °C to 27 °C.

Find the range of the temperatures during that year.

Answer(b) ..... °C [1]

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5 Work out the value of $3^4 \div 3^{-2}$.
Give your answer as an ordinary number.

Answer ..... [2]

---

6 Indira measures the length, l centimetres, of her desk as 95.6 cm, correct to the nearest millimetre.

Complete the statement about the value of l.

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

---

7 **(a)** Complete the following list of factors of 30.

1, 2, ..., 5, ..., 10, ..., 30

[1]

(b) Write down the prime factors of 30.

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

---

8 **(a)** Write 640 000 in standard form.

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

(b) Write 7.82×10^{-4} as an ordinary number.

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

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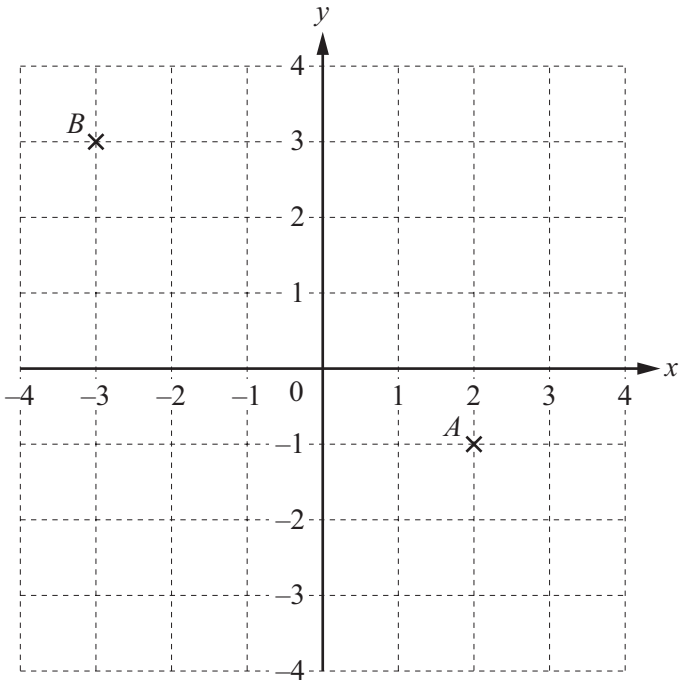
[Turn over

9 Make y the subject of the formula.

$$8 + 5y - 3x = 0$$

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

10



Points A and B are shown on the grid.

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

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

(b) Write $3\overrightarrow{AB}$ as a column vector.

Answer(b) $3\overrightarrow{AB} =$ $\begin{pmatrix} \quad \\ \quad \end{pmatrix}$ [1]

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11 Write the following in order of size, starting with the smallest.

$\frac{15}{37}$ 0.41 40.4% $\frac{17}{42}$

Answer ..... < ..... < ..... < ..... [2]

---

12 **(a)** Simplify $5k - 7k + 4k$.

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

(b) Find the value of $8x - 3y$ when $x = -2$ and $y = -5$.

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

---

13 For her holiday, Alyssa changed 2800 Malaysian Ringgits (MYR) to US dollars ($) when the exchange rate was 1 MYR = $0.325 .

At the end of her holiday she had $210 left.

(a) How many dollars did she spend?

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

(b) She changed the $210 for 750 MYR.

What was the exchange rate in dollars for 1 MYR?

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

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14 **Without using a calculator**, work out $1\frac{1}{6} \div \frac{7}{8}$.

Show all your working and give your answer as a fraction in its lowest terms.

Answer ..... [3]

---

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

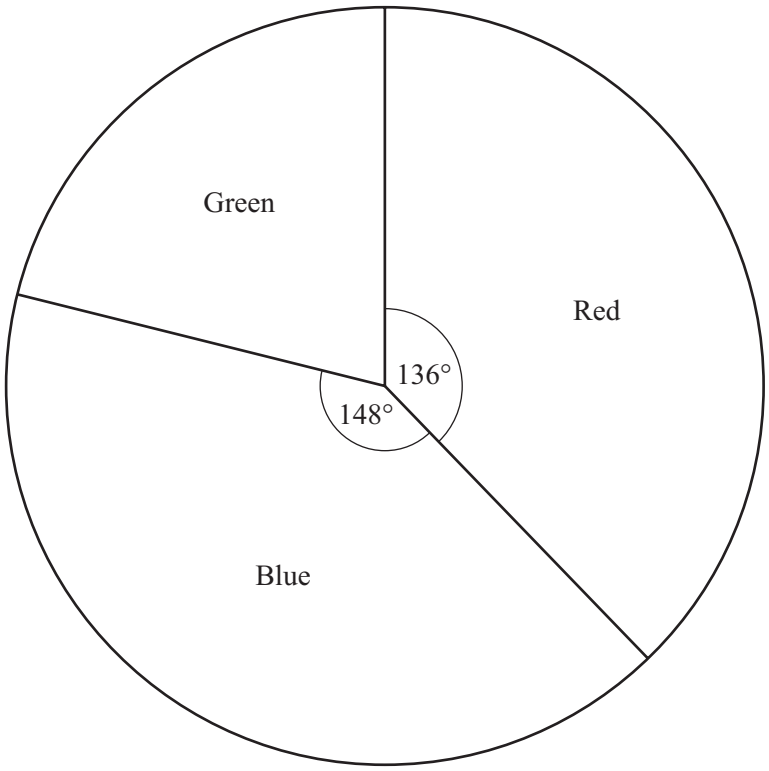
$$9x + 2y = 8$$
$$5x + 6y = -20$$

Answer x = ...

y = ... [3]

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16 A bag contains different coloured counters.
Sasha takes a counter at random, records its colour, and replaces it.
She does this 90 times and records her results in the pie chart below.



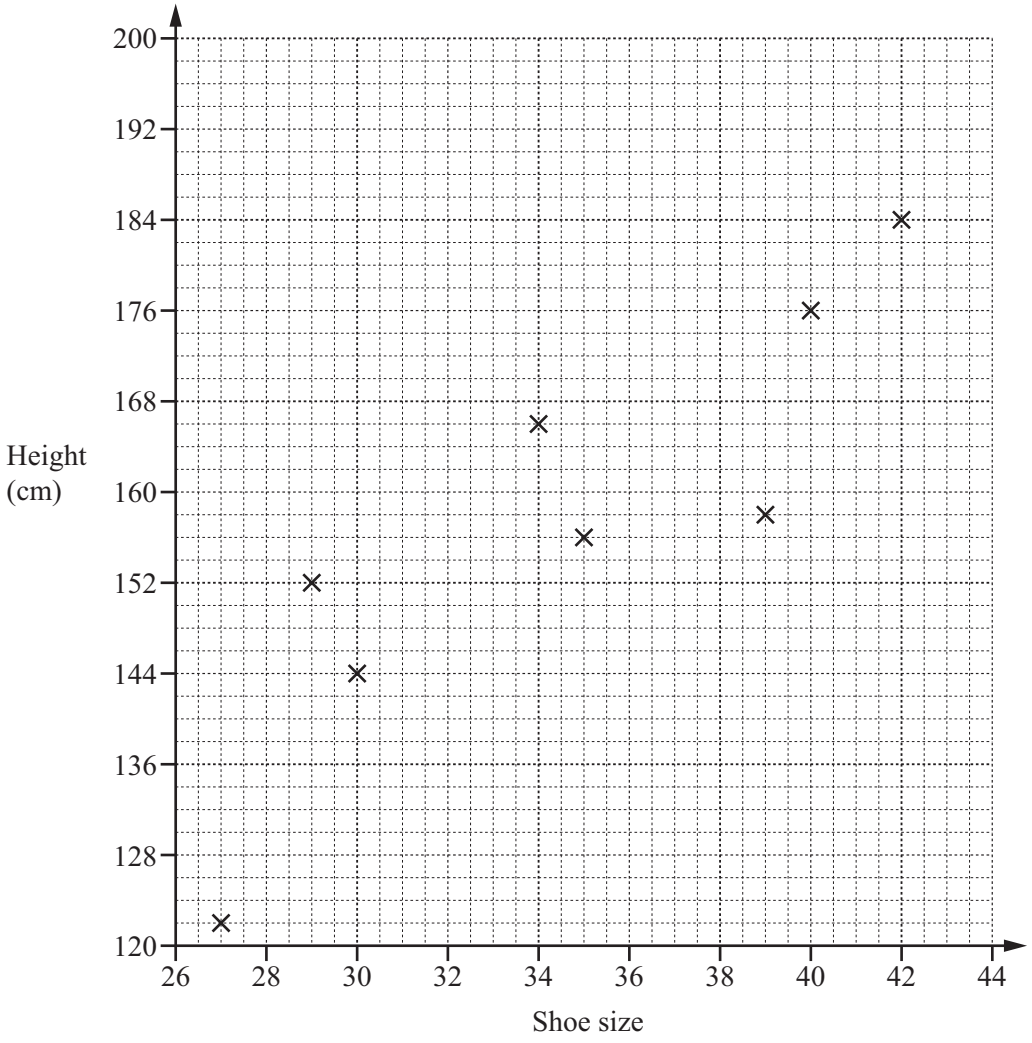
(a) Write down the relative frequency of Sasha choosing a red counter.

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

(b) Work out the number of times a green counter is chosen.

Answer(b) ..... [3]

17 The scatter diagram shows the results of height plotted against shoe size for 8 people.



(a) Four more results are recorded.

Shoe size	28	31	38	43
Height (cm)	132	156	168	198

Plot these 4 results on the scatter diagram. [2]

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

(c) What type of correlation is shown by the scatter diagram?

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

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18 Find

(a) the cube root of 729,

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

(b) the two square roots of 225,

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

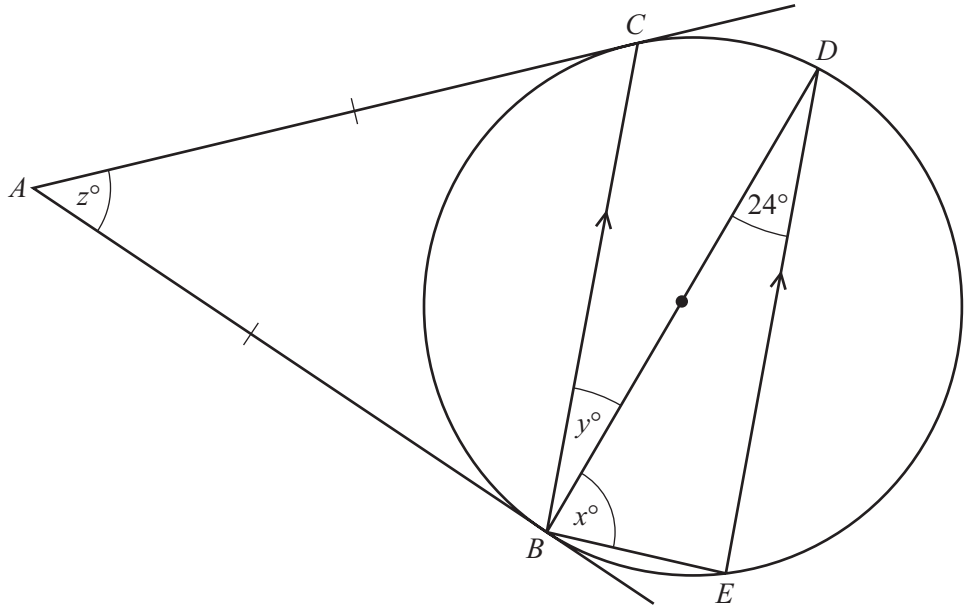
(c) a common multiple of 6 and 9,

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

(d) $(-4)^2$.

Answer(d) ..... [1]

19



NOT TO SCALE

The points *B*, *C*, *D* and *E* lie on a circle.
AB and *AC* are equal length tangents to the circle.
BD is a diameter of the circle and *BC* is parallel to *ED*.
Angle *BDE* = 24°.

Calculate the value of

(a) *x*,

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

(b) *y*,

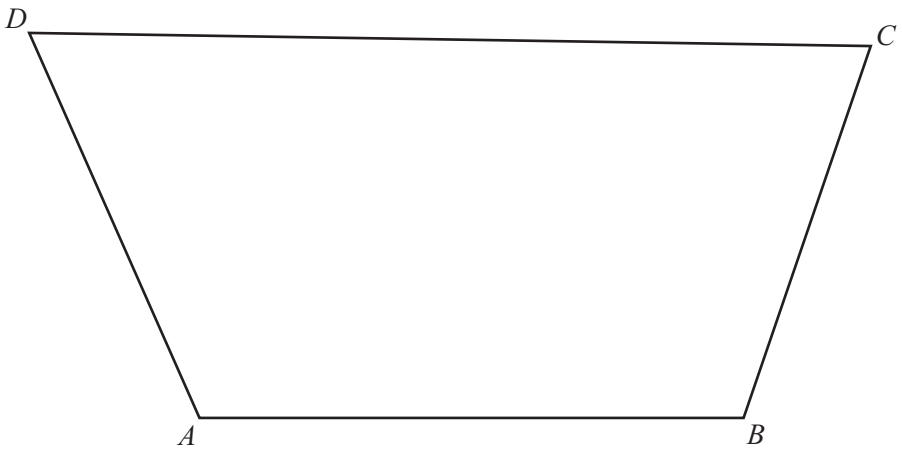
Answer(b) y = ... [1]

(c) *z*.

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

---

20 The diagram shows the plan, *ABCD*, of a park.
The scale is 1 centimetre represents 20 metres.



Scale: 1 cm to 20 m

(a) Find the actual distance *BC*.

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

(b) A fountain, *F*, is to be placed

- 160 m from *C*

and

- equidistant from *AB* and *AD*.

On the diagram, **using a ruler and compasses only**, construct and mark the position of *F*.
Leave in all your construction lines. [5]

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