Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER				

9133377151

MATHEMATICS **0580/12**

Paper 1 (Core) **February/March 2016**

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.

1 Write down, in figures, seventeen thousand and seventeen.

..... [1]

2 Apples cost \$1.12 for each kilogram.

Calculate the cost of 4.5 kilograms of apples.

\$..... [1]

3 Use your calculator to work out

$$\frac{8.2^2 - 52.48}{7.38 - 6.18}.$$

..... [1]

4 Find the number of minutes between 17 53 and 7.26 pm.

..... min [1]

5 A cube has volume 1331 cm^3.

Calculate the length of one edge of the cube.

..... cm [1]

6 **(a)** Write 6789 correct to the nearest 100.

..... [1]

(b) Write 6789 correct to 3 significant figures.

..... [1]

7 Rearrange the formula to make w the subject.

$$5w - 3y + 7 = 0$$

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

8 In each part, fill in the missing number to make a correct statement.

(a) $(-6 + 11) \times \text{.....} = -20$ [1]

(b) $\frac{7}{8} = \frac{\text{.....}}{176}$ [1]

9 Dan either walks or cycles to school.
The probability that he cycles to school is $\frac{1}{3}$.

(a) Write down the probability that Dan walks to school.

..... [1]

(b) There are 198 days in a school year.

Work out the expected number of days that Dan cycles to school in a school year.

..... [1]

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

0.239 $\quad \sqrt{0.057} \quad$ 23.85% $\quad \frac{11}{46}$

..... < ..... < ..... < ..... [2]
smallest

11 Simplify.

$$x^3y^4 \times x^5y^3$$

..... [2]

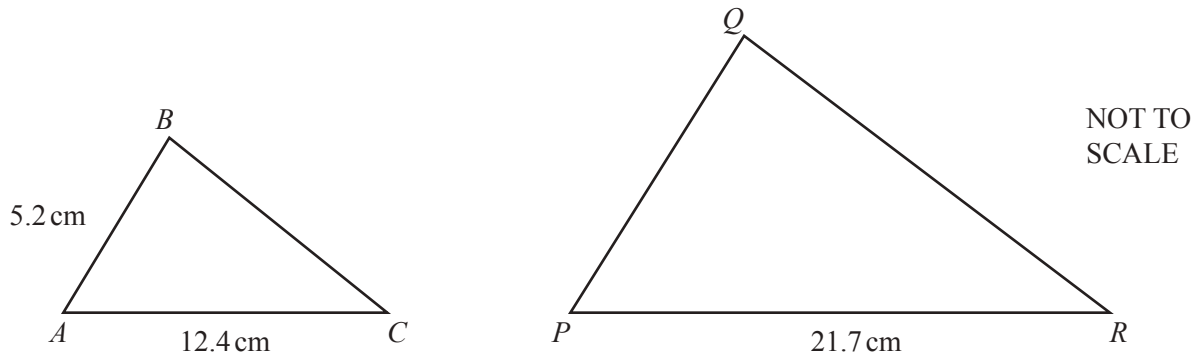
12 **(a)** Write down the value of 17^0.

..... [1]

(b) Explain why $\sqrt{17}$ is irrational.

..... [1]

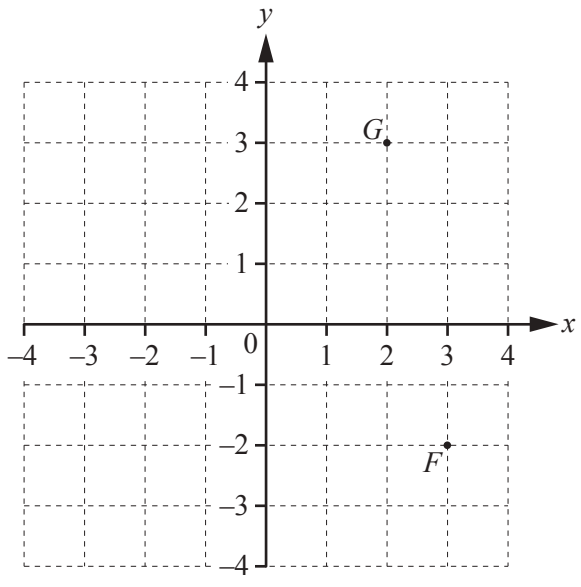
13 Triangle *ABC* is similar to triangle *PQR*.



Find *PQ*.

PQ = ... cm [2]

14



Points F and G are marked on the grid.

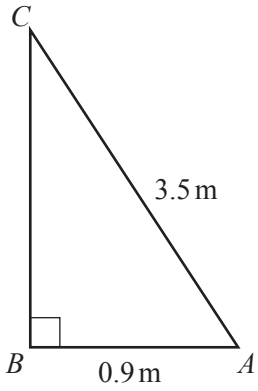
(a) Write $\overrightarrow{FG}$ as a column vector.

$\overrightarrow{FG} = \begin{pmatrix} \quad \\ \quad \end{pmatrix}$ [1]

(b) $\overrightarrow{GH} = \begin{pmatrix} -5 \\ -6 \end{pmatrix}$

Mark the point H on the grid. [1]

15

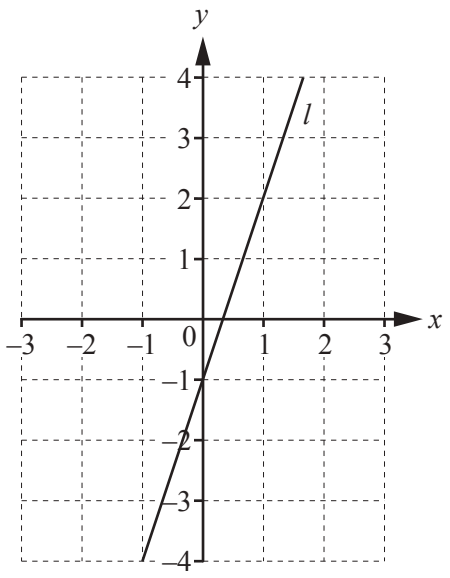


NOT TO SCALE

Calculate angle BAC.

Angle BAC = ... [2]

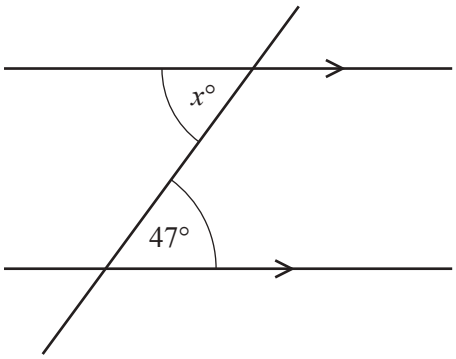
16



Write down the equation of line *l*.
Give your answer in the form $y = mx + c$.

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

17 (a)

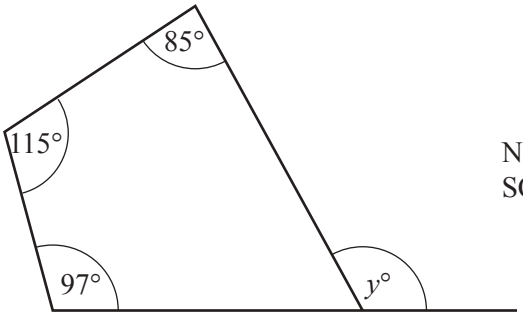


NOT TO SCALE

Find the value of x.

x = ... [1]

(b)



NOT TO SCALE

Find the value of y.

y = ... [2]

18 **Without using your calculator**, work out $1\frac{7}{12} + \frac{13}{20}$.

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

..... [3]

19

16 19 27 35 36 45 64

For each part of this question, write down one number from the list that is

(a) a multiple of 7,

..... [1]

(b) **both** a square number **and** a cube number,

..... [1]

(c) a prime number.

..... [1]

20

35, 41, 47, 53, 59, …

For this sequence, write down

(a) the next term,

..... [1]

(b) the nth term.

..... [2]

21 **(a)** Factorise completely.

$18x^2 - 24x$

..... [2]

(b) Expand the brackets.

$x(3x - 4)$

..... [2]

22 **(a)** Write 2016 as the product of prime factors.

..... [3]

(b) Write 2016 in standard form.

..... [1]

23

2 5 6 2 8 2 6 3 9

For the numbers in the list, write down

(a) the range,

..... [1]

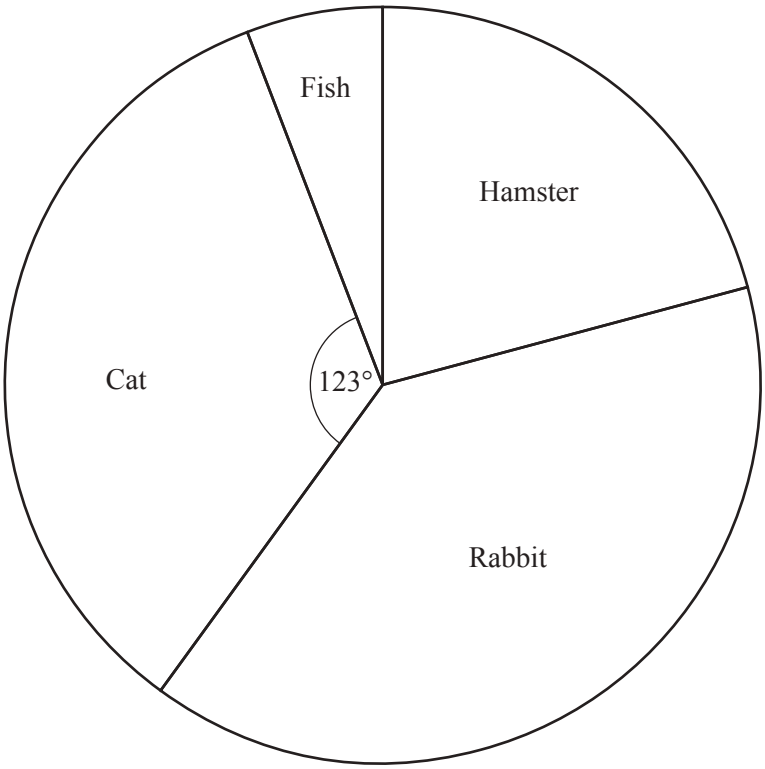
(b) the mode,

..... [1]

(c) the median.

..... [2]

24 Some children were asked to choose their favourite type of pet.
The pie chart shows the results.



(a) 41 children chose Cat.

Work out how many children were asked altogether.

..... [2]

(b) Work out how many children chose Hamster.

..... [2]

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