Cambridge IGCSE

Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER				

6021322378

MATHEMATICS **0580/12**

Paper 1 (Core) **October/November 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.

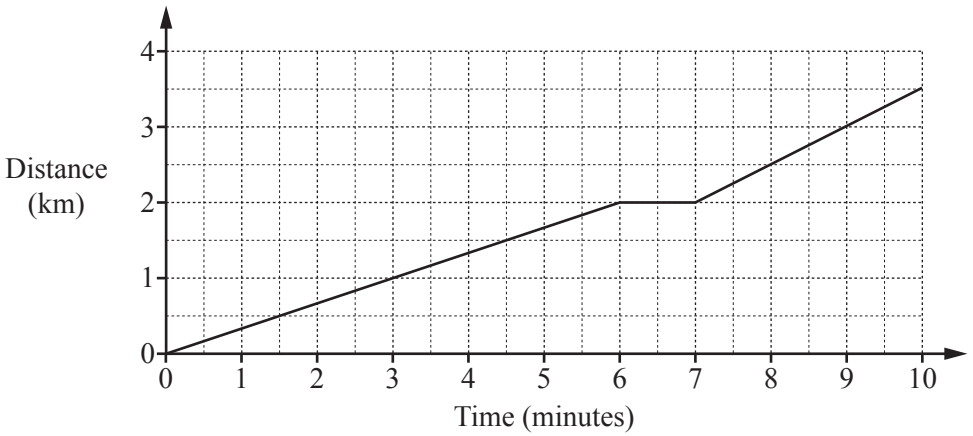
At the end of the examination, fasten all your work securely together.
The number of marks is given in brackets [ ] at the end of each question or part question.
The total of the marks for this paper is 56.

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 **12** printed pages.

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1 The distance-time graph shows the first 10 minutes of a cycle journey.



(a) After how many minutes did the cyclist stop?

..... minutes [1]

(b) How many kilometres did the cyclist travel in the first 8 minutes?

..... km [1]

2 **(a)** Write 9% as a fraction.

..... [1]

(b) Write $\frac{3}{10}$ as a decimal.

..... [1]

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3 Write the correct symbol, $>$, $=$ or $<$ in each statement.

500 m ..... 5 km

50 mm ..... 0.5 cm

5000 cm ..... 0.05 km [2]

4 A bag contains 20 counters.
10 counters are red, 8 are blue and the rest are yellow.
One counter is taken from the bag at random.

(a) Mark an arrow on the probability scale to show the probability that the counter is red.



[1]

(b) Find the probability that the counter is yellow.

..... [1]

5 **(a)** Put one pair of brackets into this calculation to make it correct.

$$6 + 12 \div 2 \times 3 = 8$$ [1]

(b) Work out. $\dfrac{1.17 + 1.28}{3.92}$

..... [1]

6 $\mathbf{m} = \begin{pmatrix} 5 \\ -7 \end{pmatrix}$ $\mathbf{n} = \begin{pmatrix} 2 \\ 6 \end{pmatrix}$

Work out

(a) $3\mathbf{m}$,

$\begin{pmatrix} \quad \\ \quad \end{pmatrix}$ [1]

(b) $\mathbf{m} - \mathbf{n}$.

$\begin{pmatrix} \quad \\ \quad \end{pmatrix}$ [1]

7 The temperature at midnight was –8°C.
The temperature at 5 am was –3°C.

(a) Work out the difference between the two temperatures.

..... °C [1]

(b) The temperature at midday was 9°C higher than the temperature at 5 am.

Work out the temperature at midday.

..... °C [1]

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8 **(a)** Write down a common multiple of 8 and 12.

..... [1]

(b) Write down a prime number between 50 and 60.

..... [1]

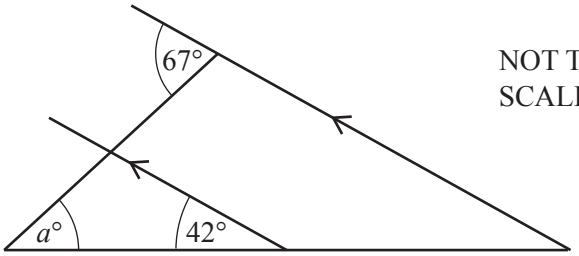
9 **(a)** Write 14 835 correct to the nearest thousand.

..... [1]

(b) Write your answer to **part (a)** in standard form.

..... [1]

10



Find the value of a.

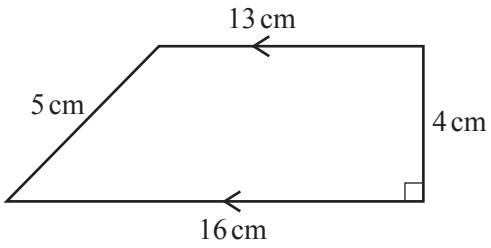
a = ... [2]

11 Solve the equation.

$$6(k - 8) = 78$$

$k =$ ..... [2]

12

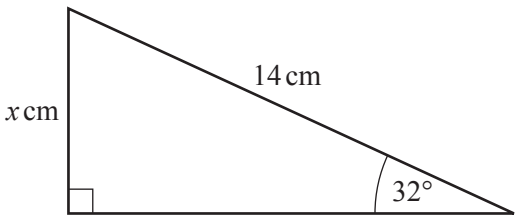


NOT TO SCALE

Calculate the area of this trapezium.

..... cm^2 [2]

13



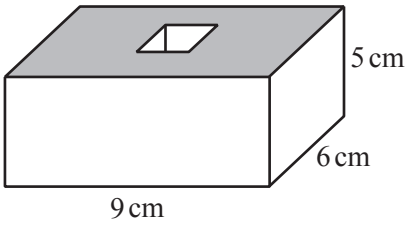
NOT TO SCALE

Use trigonometry to calculate the value of x.

$x =$ ..... [2]

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14



NOT TO SCALE

The diagram shows a solid in the shape of a cuboid with a small cube removed.
The cuboid measures 9 cm by 6 cm by 5 cm.
Each edge of the small cube measures 2 cm.

Calculate the volume of the solid.

..... cm^3 [3]

15 Cups are made in a factory.
The probability that one of these cups is faulty is 0.02 .

(a) Find the probability that a cup is not faulty.

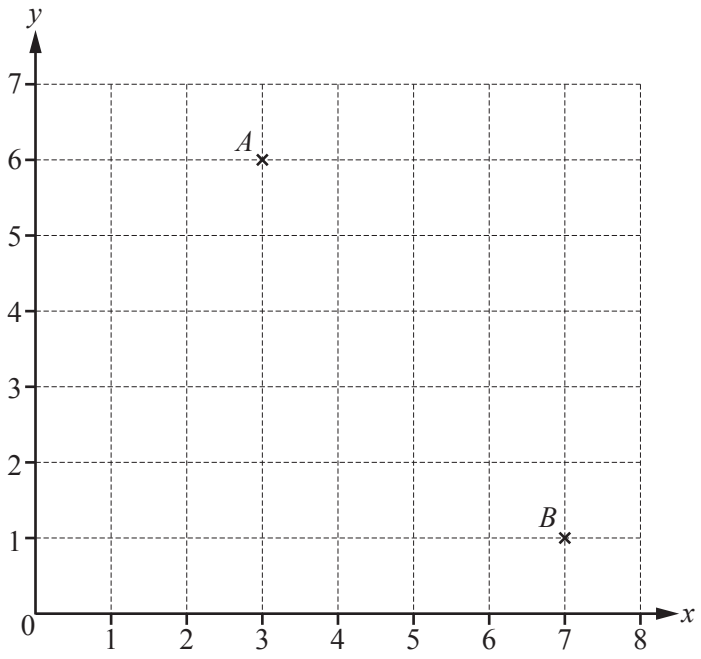
..... [1]

(b) In one day 2500 cups are made.

Work out the number of these cups that are expected to be faulty.

..... [2]

16



Point A has co-ordinates (3, 6).

(a) Write down the co-ordinates of point B.

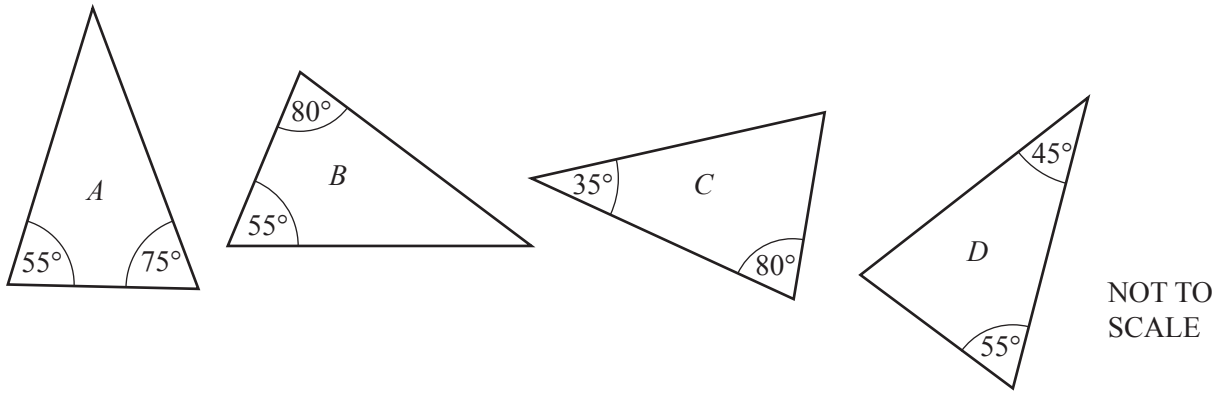
(..... , ...) [1]

(b) Find the gradient of the line AB.

..... [2]

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17 (a)

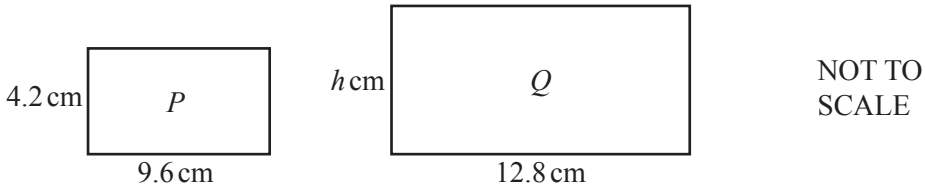


Two of these triangles are similar.

Write down the letters of these two triangles.

..... and ..... [1]

(b)

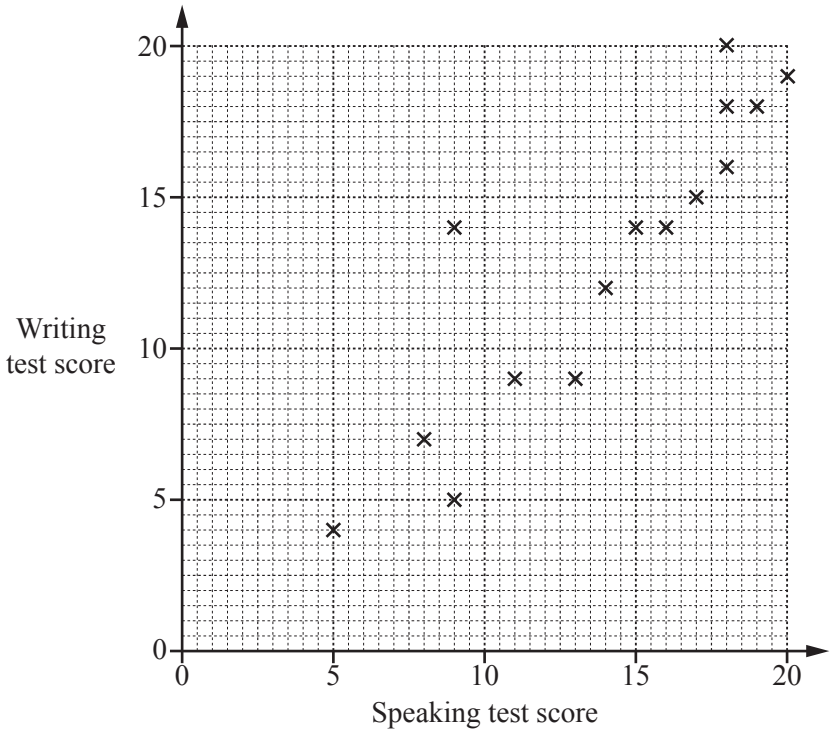


Rectangle P is similar to rectangle Q.

Work out the value of h.

$h =$ ..... [2]

18 The scatter diagram shows the speaking test scores and the writing test scores for 15 students.



(a) One student's writing test score was much better than their speaking test score.

Draw a ring around this point on the scatter diagram. [1]

(b) What type of correlation is shown on the scatter diagram?

..... [1]

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

(d) One student's scores were not recorded on the scatter diagram.
His writing test score was 10.

Use your line of best fit to estimate his speaking test score.

..... [1]

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19 **(a)** Work out the perimeter of a regular octagon with side length 4 cm.

..... cm [1]

(b) Work out the interior angle of a regular 12-sided shape.

..... [3]

20 **Without using your calculator**, work out $\frac{3}{4}+\frac{2}{3}-\frac{1}{8}$.

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

..... [4]

Question 21 is printed on the next page.

21 **(a)** Simplify.

$3p + 5p + p$

..... [1]

(b) Multiply out the brackets.

$4(q - 3)$

..... [1]

(c) Factorise completely.

$10t + 15t^2$

..... [2]

(d) Solve the simultaneous equations.
You must show all your working.

$3x + y = 7$
$5x - y = 17$

$x =$ .....

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

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