Cambridge IGCSE

Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER				

MATHEMATICS **0580/11**

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 **10** printed pages and **2** blank pages.

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CAMBRIDGE International Examinations

1 Write 30 000 000 in words.

View solution

.....[1]

2 Write down the temperature which is 5 °C below –2 °C.

View solution

..... °C [1]

3 Write \$0.70 as a fraction of \$5.60, giving your answer in its lowest terms.

View solution

.....[1]

4 Write 0.040 190 7 correct to

(a) 3 significant figures,

View solution

.....[1]

(b) 3 decimal places.

View solution

.....[1]

5 In triangle ABC, $AB = 7$ cm, $BC = 4$ cm and $AC = 6$ cm.

View solution

Using a ruler and compasses only, construct triangle ABC.
The side BC has been drawn for you.



[2]

6 Write the following in order of size, smallest first.

View solution

$\frac{7}{12}$ $\sqrt{0.33}$ 58% $\frac{18}{31}$ 0.59

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

smallest

7 $\mathbf{a} = \begin{pmatrix} 5 \\ -6 \end{pmatrix}$ $\mathbf{b} = \begin{pmatrix} -2 \\ 4 \end{pmatrix}$

View solution

Work out $2\mathbf{a} - \mathbf{b}$.

$\begin{pmatrix} \quad \\ \quad \end{pmatrix}$ [2]

8 Work out $\frac{2}{3} - \frac{1}{4}$, giving your answer as a fraction in its lowest terms.

View solution

Do not use a calculator and show all the steps of your working.

..... [2]

9 A circular pool has radius 8 m.

View solution

Calculate the circumference of the pool.

..... m [2]

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10 $\frac{2}{9}$ of an amount is 48.

Calculate the original amount.

View solution

..... [2]

11

E L E P H A N T

Francesca chooses a letter at random from this word.

(a) Write down the letter she is most likely to choose.

View solution

..... [1]

(b) Write down the probability that she chooses the letter R.

View solution

..... [1]

12 Write down the type of correlation there is between

(a) the number of litres of fuel used by a car and the distance it travels,

View solution

..... [1]

(b) the test score of a student and their shoe size.

View solution

..... [1]

13 Eleven children attempt to solve a puzzle.
This list shows the number of attempts each child made.

7 6 8 5 6 5 7 8 3 8 1

(a) Write down the mode.

View solution

..... [1]

(b) Find the median.

View solution

..... [2]

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14 Calculate.

(a) $\frac{4}{5}$ of 90

View solution

..... [1]

(b) $\frac{7.1 \times 4.8}{15.3 - 9.62}$

View solution

..... [1]

(c) $\sqrt[3]{4913}$

View solution

..... [1]

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

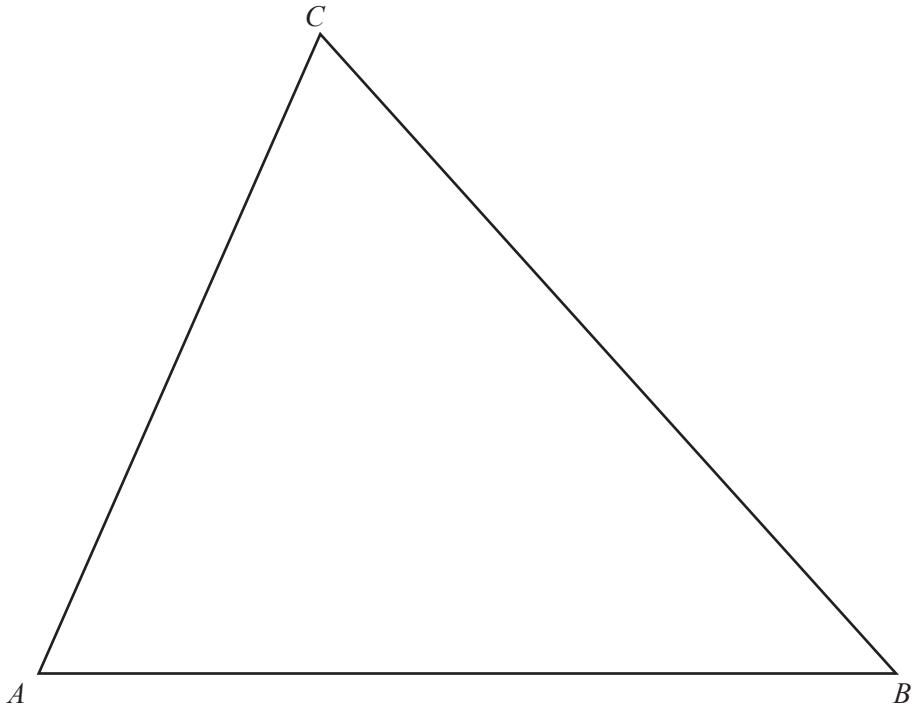
View solution

$$2x + 3y = 13$$
$$x + 2y = 9$$

$x =$ .....

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

16



View solution

(a) Construct the locus of points, inside the triangle, that are 5 cm from B. [1]

View solution

(b) Construct the locus of points, inside the triangle, that are equidistant from AB and BC. [2]

(c) Shade the region, inside the triangle, containing points that are

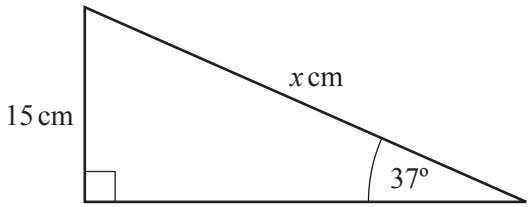
- more than 5 cm from B

and

- nearer to AB than to BC. [1]

View solution

17



NOT TO SCALE

View solution

Using trigonometry, calculate the value of x.

$x =$ ..... [3]

18 Find the nth term of each sequence.

(a) 7, 13, 19, 25, 31, …

View solution

..... [2]

(b) 9, 16, 25, 36, 49, …

View solution

..... [2]

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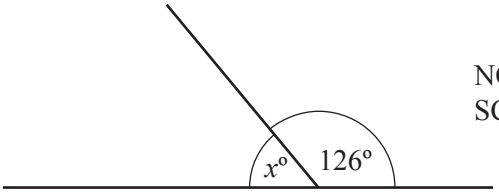
19 (a)

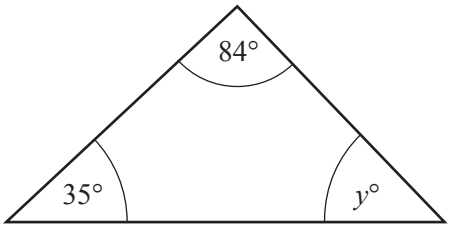


NOT TO SCALE

Work out the value of x.

x = ... [1]

(b)

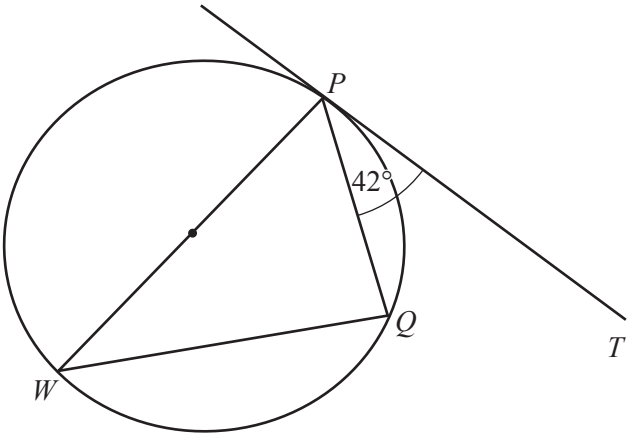


NOT TO SCALE

Work out the value of y, giving a reason for your answer.

y = ... because ..... [2]

(c)



NOT TO SCALE

In the diagram, PT is a tangent to the circle at P.
PW is a diameter and angle $TPQ = 42°$.

Find

(i) angle WPQ,

Angle WPQ = ... [1]

(ii) angle PWQ.

Angle PWQ = ... [1]

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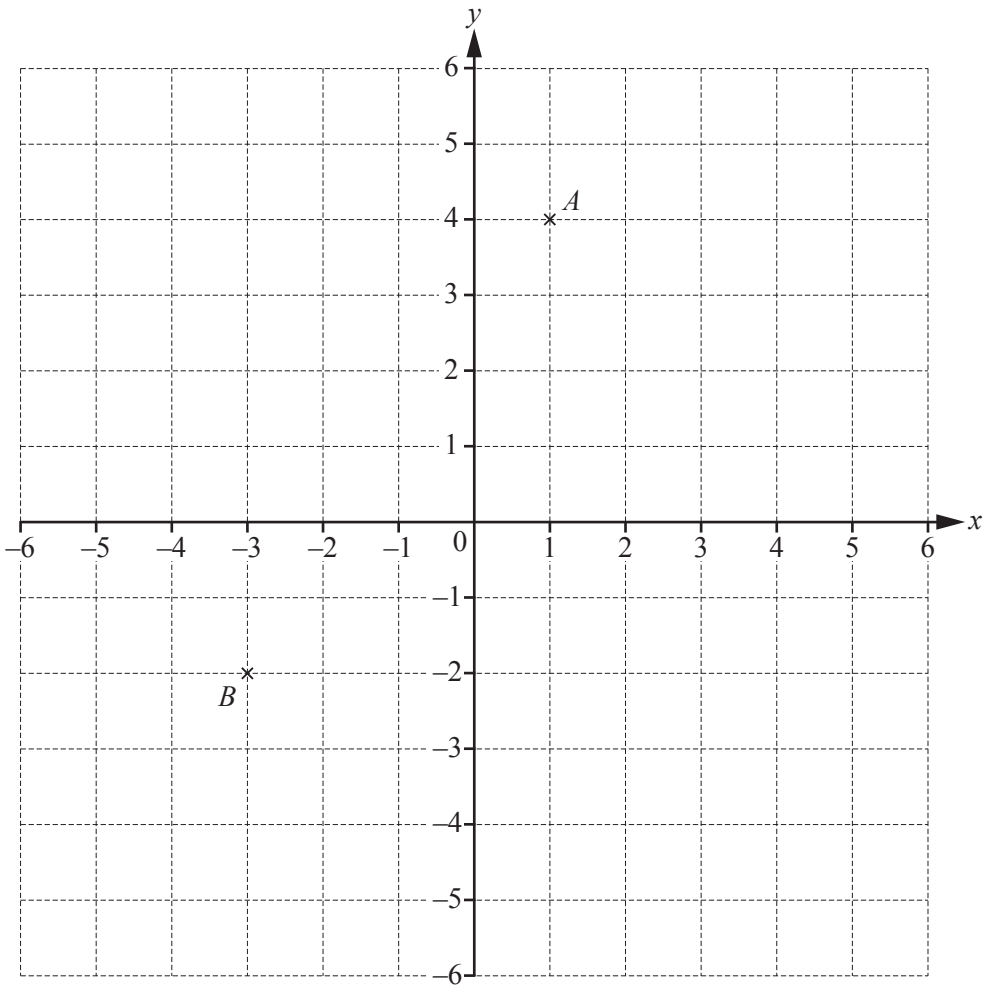
20



View solution

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

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

View solution

(b) Plot the point (5, –2).
Label this point C. [1]

View solution

(c) Write down the mathematical name of triangle ABC.

..... [1]

View solution

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

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

View solution

(e) $\overrightarrow{BD} = \begin{pmatrix} -2 \\ 5 \end{pmatrix}$

Write down the co-ordinates of point D.

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

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21 **(a)** Solve the equation.

$$4x + 3 = 11$$

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

(b) Make x the subject of the formula $y = 4x^2 - 2$.

View solution

$x =$ ..... [3]

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