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0580/11

October/November 2016

1 hour

Additional Materials: Electronic calculator Geometrical instruments
Tracing paper (optional)

READ THESE INSTRUCTIONS FIRST

DO **NOT** WRITE IN ANY BARCODES.

For π , use either your calculator value or 3.142.

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 30 000 000 in words.

..... [1]

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

..... $^{\circ}\text{C}$ [1]

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

..... [1]

- 4 Write 0.040 190 7 correct to

(a) 3 significant figures,

..... [1]

(b) 3 decimal places.

..... [1]

- 5 In triangle ABC , $AB = 7\text{ cm}$, $BC = 4\text{ cm}$ and $AC = 6\text{ cm}$.

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.

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

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

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

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

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

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

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

..... [2]

- 9 A circular pool has radius 8 m.

Calculate the circumference of the pool.

..... m [2]

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

Calculate the original amount.

..... [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.

..... [1]

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

..... [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,

..... [1]

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

..... [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.

..... [1]

- (b) Find the median.

..... [2]

14 Calculate.

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

..... [1]

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

..... [1]

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

..... [1]

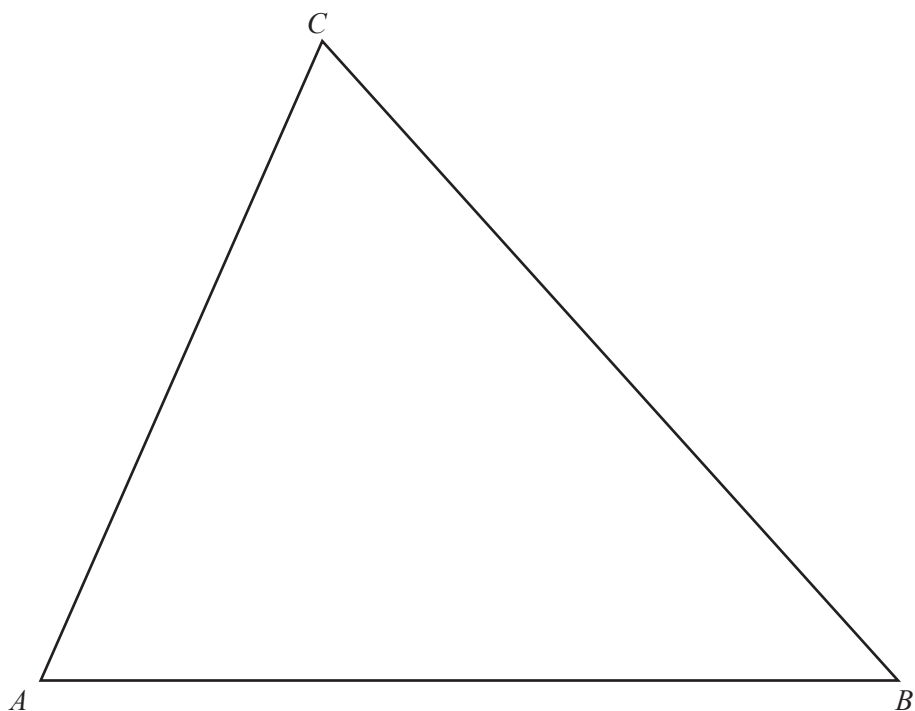
15 Solve the simultaneous equations.
You must show all your working.

$$\begin{aligned} 2x + 3y &= 13 \\ x + 2y &= 9 \end{aligned}$$

$x =$

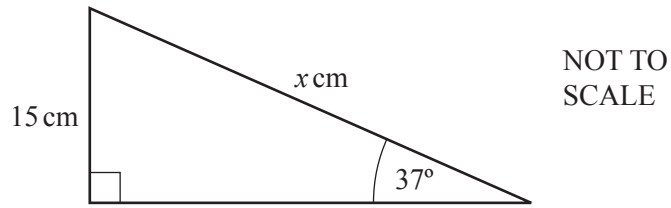
$y =$ [3]

16



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

17



Using trigonometry, calculate the value of x .

$x = \dots\dots\dots$ [3]

18 Find the n th term of each sequence.

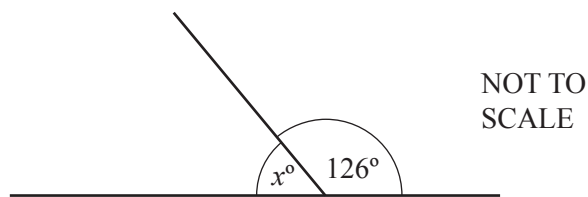
(a) 7, 13, 19, 25, 31, ...

$\dots\dots\dots$ [2]

(b) 9, 16, 25, 36, 49, ...

$\dots\dots\dots$ [2]

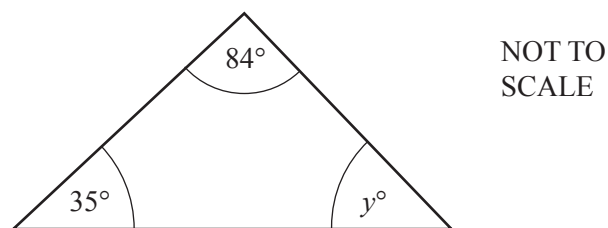
19 (a)



Work out the value of x .

$x = \dots\dots\dots$ [1]

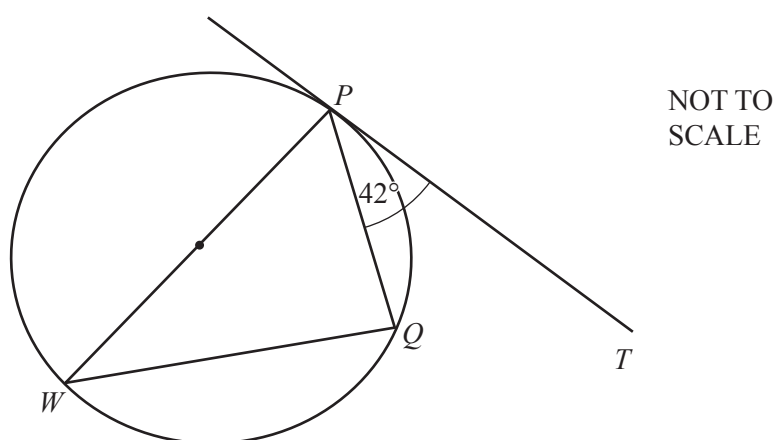
(b)



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

$y = \dots\dots\dots$ because $\dots\dots\dots$ [2]

(c)



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

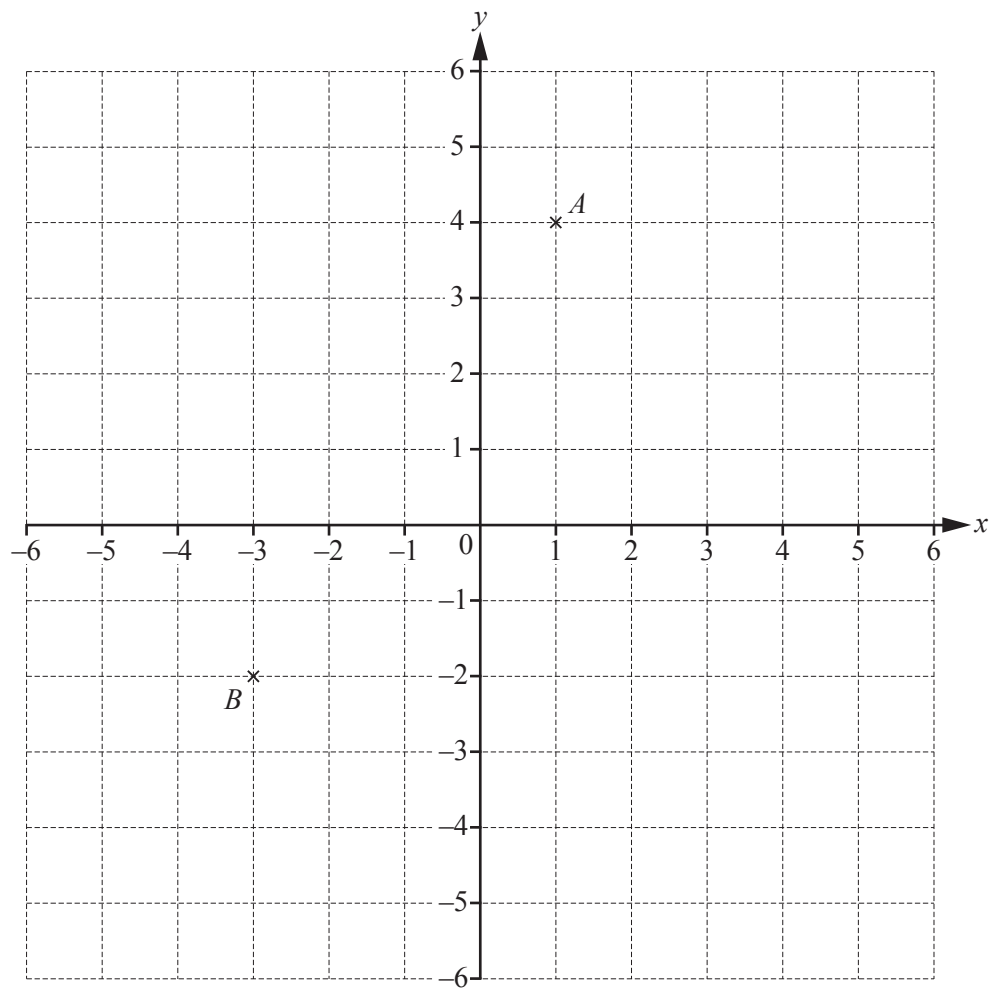
Find

(i) angle WPQ ,

Angle $WPQ = \dots\dots\dots$ [1]

(ii) angle PWQ .

Angle $PWQ = \dots\dots\dots$ [1]



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

(..... ,) [1]

- (b) Plot the point $(5, -2)$.
Label this point C .

[1]

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

..... [1]

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

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

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

Write down the co-ordinates of point D .

(..... ,) [1]

- 21 (a) Solve the equation.

$$4x + 3 = 11$$

$$x = \dots\dots\dots [2]$$

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

$$x = \dots\dots\dots [3]$$

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