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0580/11

October/November 2017

1 hour

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

READ THESE INSTRUCTIONS FIRST

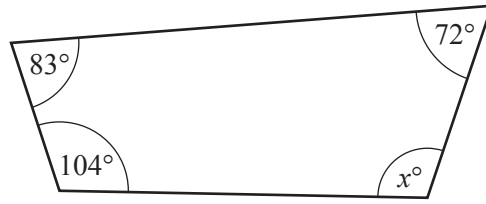
DO **NOT** WRITE IN ANY BARCODES.

For π , use either your calculator value or 3.142.

The total of the marks for this paper is 56.

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

1



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SCALE

The diagram shows a quadrilateral.

Find the value of x .

$x =$ [1]

- 2 A watch costs \$80.
The exchange rate is $\$1 = 124.3$ Japanese Yen.

Work out the cost of the watch in Yen.

..... Yen [1]

- 3 Work out.
 $2^{-4} \times 2^5$

..... [1]

- 4 Amber's mean mark on five tests is 80.
Her marks on four of these tests are 68, 81, 74 and 89.

Work out her mark on the fifth test.

..... [2]

5 Write 18.766 correct to

(a) 1 decimal place,

..... [1]

(b) 2 significant figures.

..... [1]

6 Calculate.

$$\sqrt{2 + \frac{0.2}{1.7 - 0.9}}$$

..... [2]

7 Factorise completely.

$$12x^2 + 15xy - 9x$$

..... [2]

8 The time, t seconds, that Jade takes to run a race is 14.3 seconds, correct to 1 decimal place.

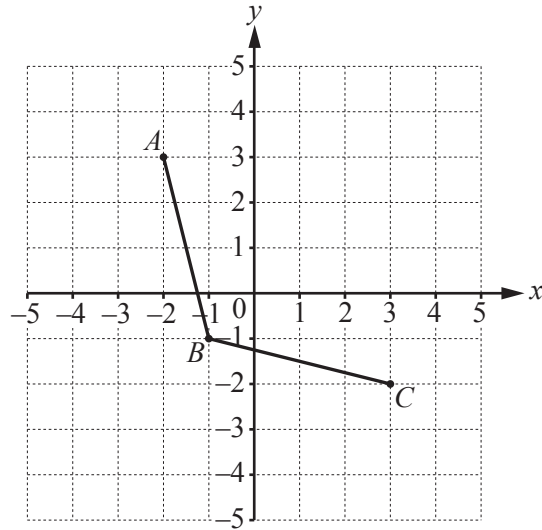
Complete this statement about the value of t .

..... $\leq t <$ [2]

9 Calculate the area of a circle with diameter 9 cm.

..... cm^2 [2]

10



The diagram shows two sides of a rhombus $ABCD$.

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

(..... ,) [1]

- (b) Complete the rhombus $ABCD$ on the grid.

[1]

- 11 (a) Write the fraction $\frac{30}{54}$ in its lowest terms.

..... [1]

- (b) Complete this table.

Fraction	Decimal	Percentage
$\frac{9}{100}$	=	=

[2]

- 12** Without using a calculator, work out $1\frac{2}{3} - \frac{11}{15}$.

Write down all the steps of your working and give your answer as a fraction in its lowest terms.

..... [3]

- 13** $\sqrt{5}$ -7 343 -11 0.4 2.5 $\frac{1}{3}$

From this list of numbers, write down

- (a) a cube number,

..... [1]

- (b) the smallest number,

..... [1]

- (c) a natural number.

..... [1]

- 14** Work out.

(a) $\begin{pmatrix} 3 \\ 2 \end{pmatrix} + \begin{pmatrix} -1 \\ 5 \end{pmatrix}$

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

(b) $\begin{pmatrix} 6 \\ 3 \end{pmatrix} - \begin{pmatrix} 4 \\ -2 \end{pmatrix}$

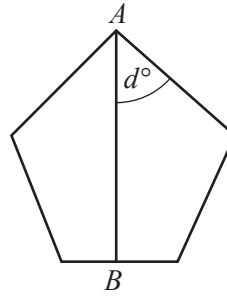
$\begin{pmatrix} \\ \end{pmatrix}$ [1]

(c) $4\begin{pmatrix} 2 \\ 5 \end{pmatrix}$

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

- 15 The diagram shows a regular pentagon.
 AB is a line of symmetry.

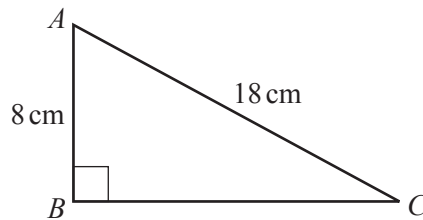
Work out the value of d .



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$d = \dots\dots\dots$ [3]

16



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Calculate the length of BC .

$BC = \dots\dots\dots$ cm [3]

- 17 Simplify.

(a) $(m^5)^2$

$\dots\dots\dots$ [1]

(b) $4x^3y \times 5x^2y$

$\dots\dots\dots$ [2]

- 18** Solve the simultaneous equations.
You must show all your working.

$$\begin{aligned}3x + 4y &= 6 \\ 6x - y &= -15\end{aligned}$$

$$x = \dots\dots\dots$$

$$y = \dots\dots\dots [3]$$

- 19 (a) Juan asks 40 people which language they speak at home.
The table shows the results.

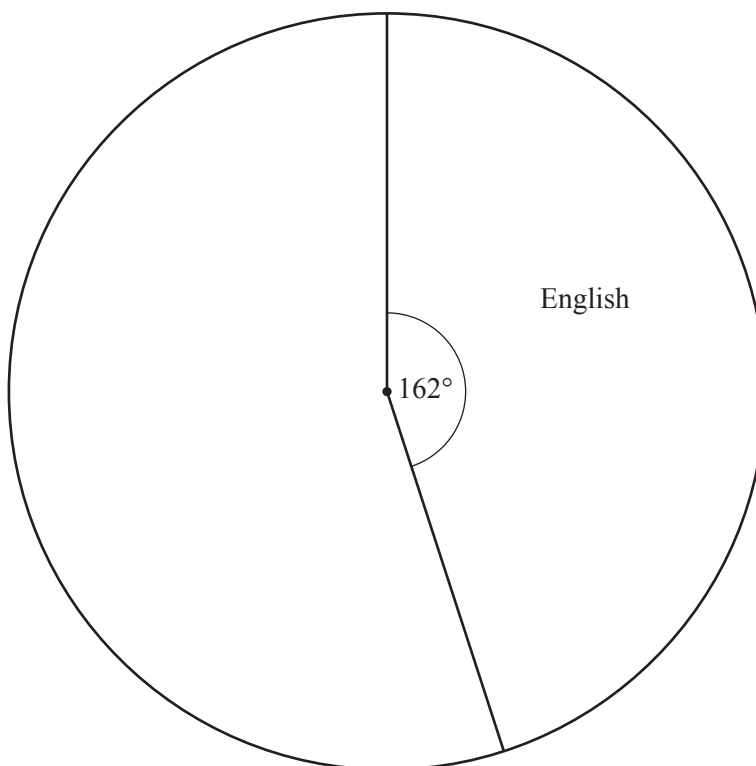
Language	Frequency	Pie chart sector angle
English	18	162°
French	11	
Spanish	7	
Other	4	

Juan wants to draw a pie chart to show this information.

- (i) Complete the table.

[3]

- (ii) Complete the pie chart.



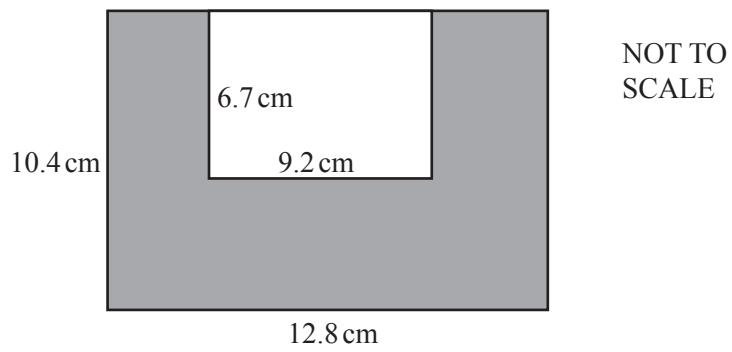
[1]

- (b) Mansoor also asks some people which language they speak at home.
In Mansoor's pie chart, the sector angle for Portuguese is 108° .

Write down the fraction of these people who do **not** speak Portuguese at home.

..... [1]

20 (a)

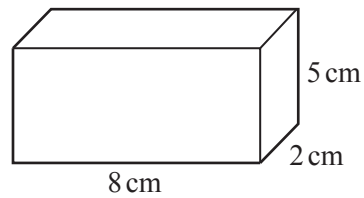


The diagram shows a small rectangle inside a large rectangle.

Work out the shaded area.

..... cm^2 [2]

(b)

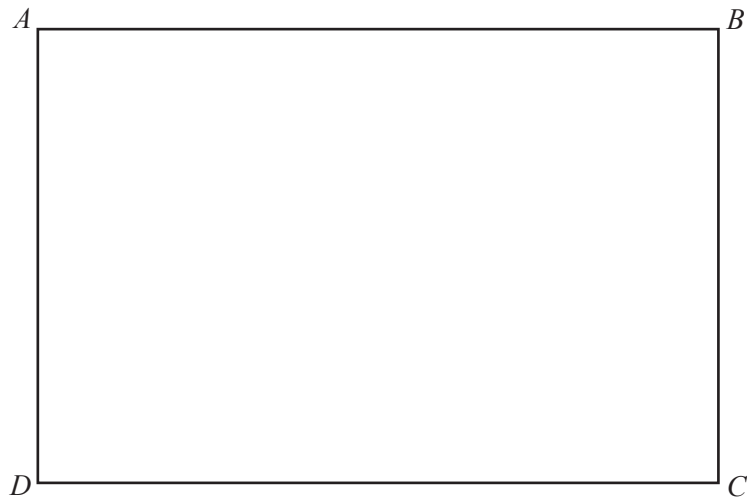


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Work out the surface area of this cuboid.

..... cm^2 [3]

- 21 The diagram shows a rectangle $ABCD$.



- (a) In this part, use a straight edge and compasses only and show your construction arcs.

Construct

- (i) the bisector of angle DCB , [2]

- (ii) the perpendicular bisector of DC . [2]

- (b) Shade the region containing the points inside the rectangle that are

- nearer to D than to C
- and
- nearer to BC than to DC . [1]

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