Cambridge IGCSE

Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

CANDIDATE NAME	
CENTRE NUMBER	
CANDIDATE NUMBER	

8626565162

MATHEMATICS **0580/13**

Paper 1 (Core) **May/June 2018**

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.

This document consists of **12** printed pages.

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1 Write 75% as a fraction in its simplest form.

..... [1]

2 Factorise.

$$w + w^3$$

..... [1]

3 Liz takes 65 seconds to run 400 m.

Calculate her average speed.

..... m/s [1]

4 Calculate.

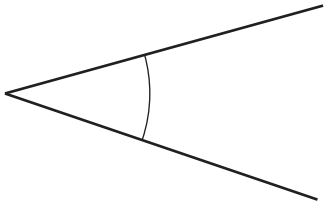
$$\sqrt{\frac{18^2}{0.5 + 1.75}}$$

..... [1]

5 Work out the value of 4^{-2}.

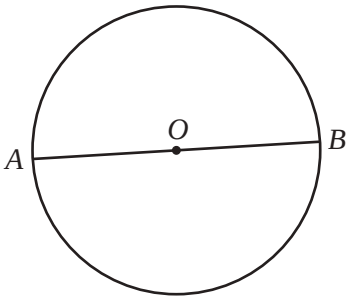
..... [1]

6 **(a)** Write down the mathematical name of the type of angle marked.



..... [1]

(b) *A* and *B* are points on the circumference of a circle, centre *O*.



Write down the mathematical name of the line *AB*.

..... [1]

7 Write these numbers in order, starting with the smallest.

$\frac{4}{15}$ 26% 0.24 $\frac{1}{4}$

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

8 Complete the list of factors of 36.

1, 2, ..., 36 [2]

9 Increase \$22 by 15%.

\$..... [2]

10 **(a)** Write 209 802 correct to the nearest thousand.

..... [1]

(b) Write 4123 correct to 3 significant figures.

..... [1]

11 Jez and Soraya share \$2500 in the ratio Jez : Soraya = 7 : 3.

Work out how much Soraya receives.

\$..... [2]

12 The probability that Kim wins a game is 0.72 .
In one year Kim will play 225 games.

Work out an estimate of the number of games Kim will win.

..... [2]

13 **(a)** Write 4.82×10^{-3} as an ordinary number.

..... [1]

(b) Write 52 million in standard form.

..... [1]

14 Solve.

$$\frac{1-p}{3} = 4$$

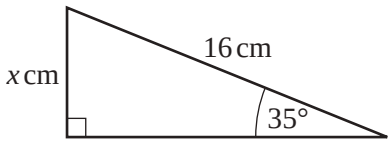
$p =$ ..... [2]

15 The mass, m kilograms, of a package is 6.2 kg, correct to 1 decimal place.

Complete the statement about the value of m.

..... $\leqslant m <$ ..... [2]

16



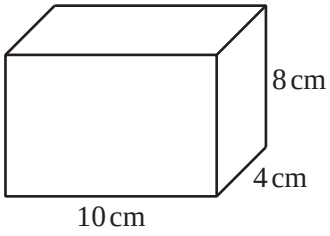
NOT TO SCALE

The diagram shows a right-angled triangle.

Calculate the value of x.

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

17 The diagram shows a cuboid.



NOT TO SCALE

Work out the surface area of this cuboid.

.....cm^2 [3]

18 **Without using a calculator**, work out $\frac{2}{3} \div 1\frac{1}{5}$.

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

..... [3]

19 **(a)** Work out.

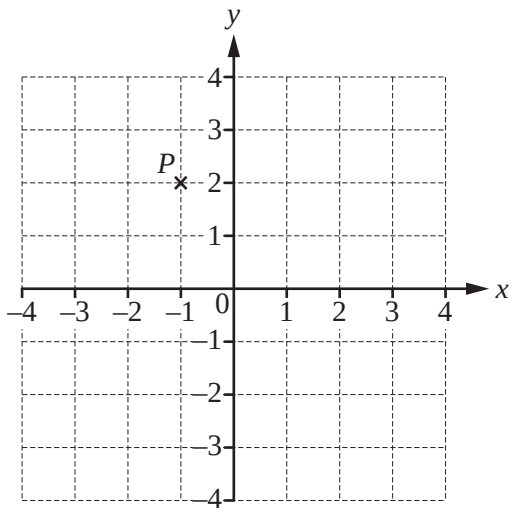
(i) $\begin{pmatrix} 5 \\ -1 \end{pmatrix} + \begin{pmatrix} 2 \\ 6 \end{pmatrix}$

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

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

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

(b)



P is the point $(-1, 2)$ and $\overrightarrow{PQ} = \begin{pmatrix} 4 \\ -3 \end{pmatrix}$.

Find the co-ordinates of Q.

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

20 **(a)** Line L has the equation $y = 5x + 12$.

Write down the gradient of line L.

..... [1]

(b) Another line, M, has the equation $y = 8x + 3$.

Write down the equation of the line parallel to line M that passes through the point (0, 6).

..... [2]

21 **(a)** Change 568 000 cm into metres.

..... m [1]

(b) The scale drawing shows the positions of two towns, *A* and *B*.
The scale is 1 centimetre represents 5 kilometres.

Scale : 1 cm to 5 km

(i) Measure the bearing of town *B* from town *A*.

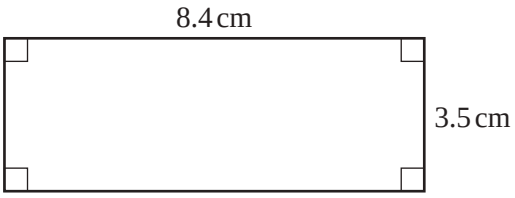
..... [1]

(ii) Find the actual distance, in kilometres, from town *A* to town *B*.

..... km [2]

22 Work out the area of each shape.

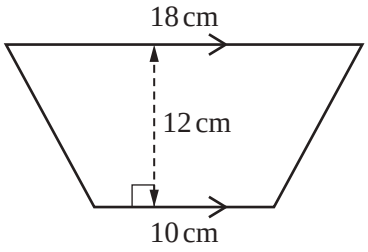
(a)



NOT TO SCALE

..... cm^2 [2]

(b)



NOT TO SCALE

..... cm^2 [2]

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

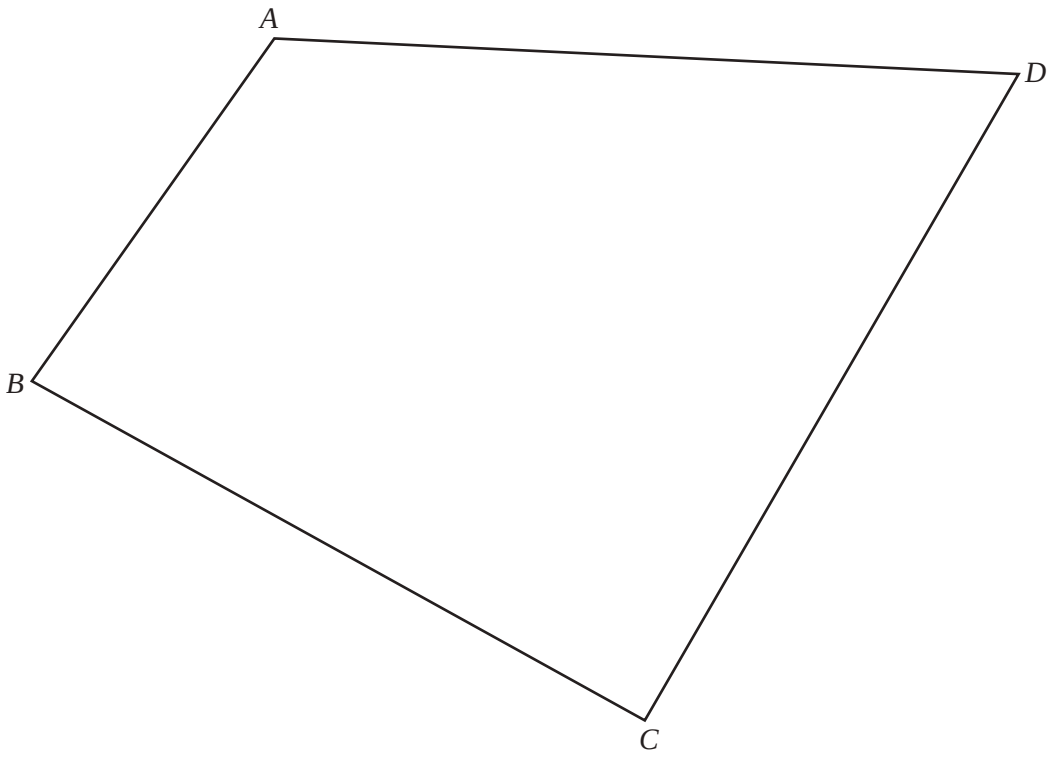
$$3x - 2y = 23$$
$$2x + 5y = 9$$

$x =$ .....

$y =$ ..... [4]

Question 24 is printed on the next page.

24 *ABCD* is a quadrilateral.



(a) **Using a straight edge and compasses only**, construct the perpendicular bisector of *BC*.
Show all your construction arcs. [2]

(b) **Using a straight edge and compasses only**, construct the bisector of angle *BCD*.
Show all your construction arcs. [2]

(c) Shade the region inside *ABCD* that is

- nearer to *B* than to *C*

and

- nearer to *CD* than to *BC*. [1]