Cambridge IGCSE

Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

CANDIDATE NAME

CENTRE NUMBER

CANDIDATE NUMBER

6293220431

MATHEMATICS **0580/13**

Paper 1 (Core) **October/November 2014**

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.

CAMBRIDGE International Examinations

1 Write 0.13 as a fraction.

Answer ..... [1]

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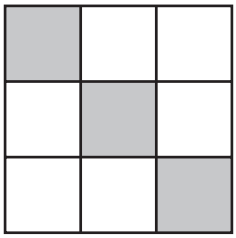
2 **(a)** Write in figures the number three hundred and four thousand six hundred and twenty.

Answer(a) ..... [1]

(b) Write your answer to **part (a)** correct to 3 significant figures.

Answer(b) ..... [1]

3



(a) Write down the order of rotational symmetry of the diagram.

Answer(a) ..... [1]

(b) Draw the lines of symmetry on the diagram. [1]

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4 Calculate $\frac{9.25 + 26.4}{3.71}$.

Give your answer correct to 2 decimal places.

Answer ..... [2]

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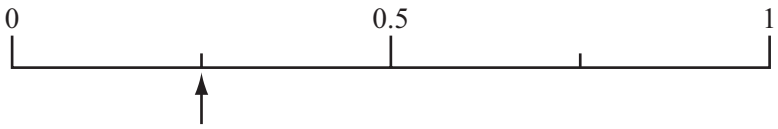
5 A bag contains 20 counters.
One counter is taken from the bag at random.
The arrow on the probability scale shows the probability that this counter is blue.



(a) Work out the number of blue counters in the bag.

Answer(a) ..... [1]

(b) Find the probability that the counter is **not** blue.

Answer(b) ..... [1]

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6 The temperature in a freezer is –20.5 °C.

(a) The temperature in a fridge is 2.8 °C.

Find the difference between the temperature in the fridge and the temperature in the freezer.

Answer(a) ..... °C [1]

(b) The temperature in the freezer rises by 5 °C.

Find the temperature in the freezer now.

Answer(b) ..... °C [1]

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7 Find the value of

(a) $\sqrt[3]{2744}$,

Answer(a) ..... [1]

(b) 6^4.

Answer(b) ..... [1]

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8 $\mathbf{m} = \begin{pmatrix} 5 \\ -2 \end{pmatrix}$ $\mathbf{n} = \begin{pmatrix} -3 \\ 6 \end{pmatrix}$

Work out

(a) $\mathbf{m} + \mathbf{n}$,

Answer(a) $\begin{pmatrix} \quad \\ \quad \end{pmatrix}$ [1]

(b) $3\mathbf{n}$.

Answer(b) $\begin{pmatrix} \quad \\ \quad \end{pmatrix}$ [1]

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9 **Without using a calculator**, work out $\frac{4}{5} - \frac{2}{3}$.
Give your answer as a fraction and show each step of your working.

Answer ..... [2]

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10 Make x the subject of the formula $y = 6x - 1$.

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

---

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

$0.34 \qquad \sqrt{0.6} \qquad 0.6^2 \qquad 0.7^3$

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

---

12 Work out $4 \times 10^{-5} \times 6 \times 10^{12}$.
Give your answer in standard form.

Answer ..... [2]

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13 The four sector angles in a pie chart are $2x°$, $3x°$, $4x°$ and 90°.

Find the value of x.

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

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14 A train takes 65 minutes to travel 52 km.

Calculate the average speed of the train in kilometres per hour.

Answer ..... km/h [2]

[Turn over

15 **(a)** A parcel is in the shape of a cuboid of length 18 cm, width 10 cm and height 8 cm.

Calculate the volume of the parcel.

Answer(a) ..... cm^3 [2]

(b) The mass of the parcel is 1.7 kilograms.

Change 1.7 kilograms to grams.

Answer(b) ..... g [1]

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16 **(a)** Simplify.

$5j + 2k + j - 3k$

Answer(a) ..... [2]

(b) Factorise.

$5p + 10$

Answer(b) ..... [1]

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17 **(a)** Paolo thinks of a number.
It has two digits.
It is a common factor of 36 and 48.

Write down Paolo's number.

Answer(a) ..... [1]

(b) Maria thinks of a number.
It has two digits.
It is a common multiple of 15 and 20.

Write down Maria's number.

Answer(b) ..... [1]

(c) Kemar thinks of a number.
It is between 1 and 2.
It is an irrational number.

Write down a number he could be thinking of.

Answer(c) ..... [1]

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18 Solve the equation.

$$\frac{2x + 5}{3} = 8$$

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

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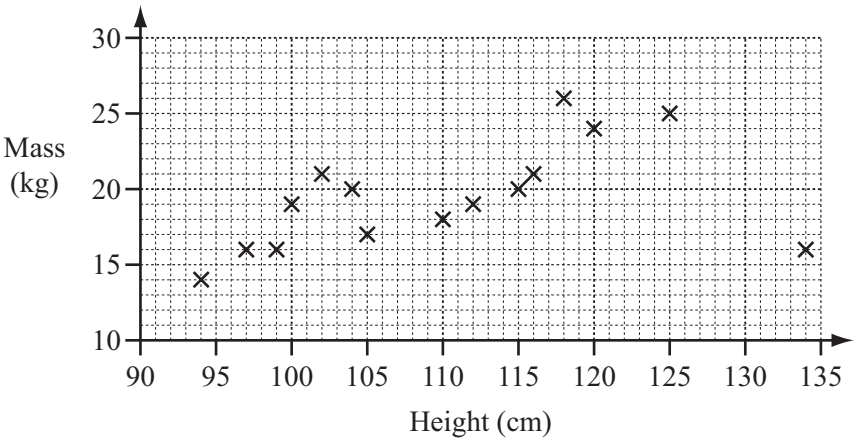
19 The scatter diagram shows the heights and masses of some five-year-old boys.



(a) The height of one of the boys is likely to have been recorded incorrectly.

Write down the mass of this boy.

Answer(a) ..... kg [1]

(b) What type of correlation does the scatter diagram show?

Answer(b) ..... [1]

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

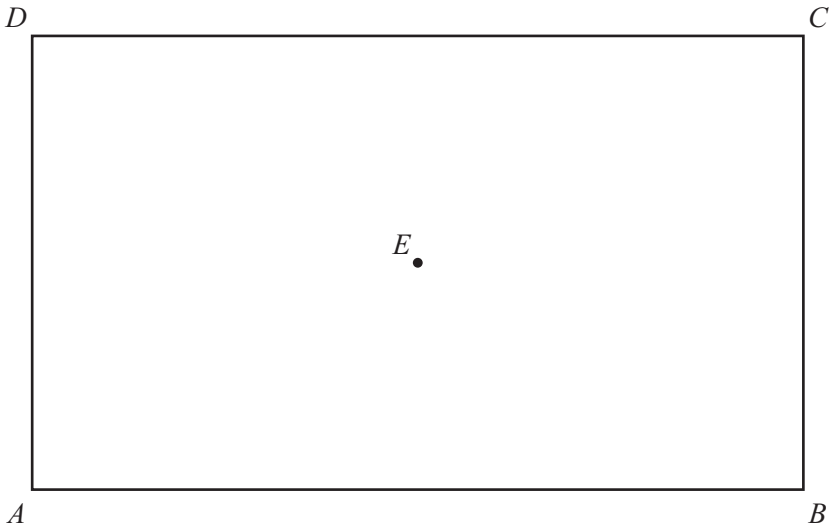
(ii) Another boy had a height of 108 cm.
His mass was not recorded.

Use your line of best fit to estimate the boy's mass.

Answer(c)(ii) ..... kg [1]

[Turn over

20



(a) Draw the locus of the points which are 3 cm from E. [1]

(b) **Using a straight edge and compasses only**, construct the bisector of angle DCB. [2]

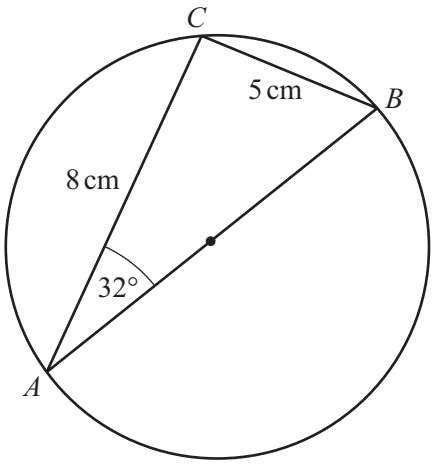
(c) Shade the region which is

- less than 3 cm from E

and

- nearer to CB than to CD. [1]

21



NOT TO SCALE

A, *B* and *C* lie on a circle with diameter *AB*.
Angle *CAB* = 32°, *AC* = 8 cm and *BC* = 5 cm.

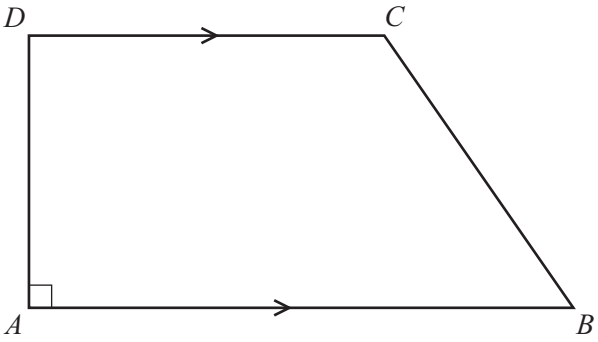
(a) Work out the size of angle *CBA*.

Answer(a) Angle *CBA* = ... [2]

(b) Work out the length of *AB*.

Answer(b) *AB* = ... cm [2]

22 This is an accurate drawing of quadrilateral *ABCD*.



(a) Write down the mathematical name for quadrilateral *ABCD*.

Answer(a) ..... [1]

(b) Measure the size of the acute angle.

Answer(b) ..... [1]

(c) By taking suitable measurements from the diagram, work out the area of *ABCD*.

Answer(c) ..... cm^2 [3]

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