Cambridge IGCSE

Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

CANDIDATE NAME

CENTRE NUMBER | | | | | |

CANDIDATE NUMBER | | | | |

9380753268

MATHEMATICS **0580/12**

Paper 1 (Core) **May/June 2015**

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 **11** printed pages and **1** blank page.

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1 A doctor starts work at 20 40 and finishes work at 06 10 the next day.

How long is the doctor at work?
Give your answer in hours and minutes.

Answer ..... h ..... min [1]

---

2 Write 53 400 000 in standard form.

Answer ..... [1]

---

3 Write down the gradient of the line $y = -3x + 4$.

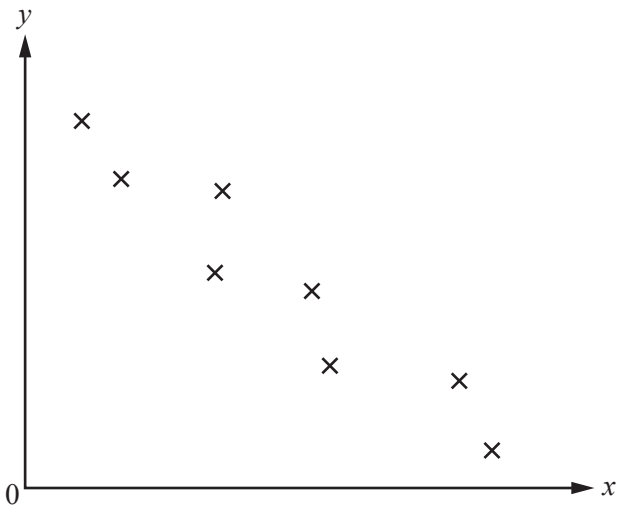
Answer ..... [1]

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4 Simplify $5x^0$.

Answer ..... [1]

5



What type of correlation is shown on the scatter diagram?

Answer ..... [1]

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6 Write 64% as

(a) a decimal,

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

(b) a fraction in its simplest form.

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

---

7 Expand the brackets and simplify.

$$5(x - 3) - 3(x - 5)$$

Answer ..... [2]

---

8 Write the following in order of size, starting with the smallest.

3^{-2} 0.11 $\frac{2}{17}$ $\sqrt{0.011}$

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

---

9 A biased 4-sided dice is rolled.
The possible scores are 1, 2, 3 or 4.
The probability of rolling a 1, 3 or 4 is shown in the table.

Score	1	2	3	4
Probability	0.15		0.3	0.35

Complete the table. [2]

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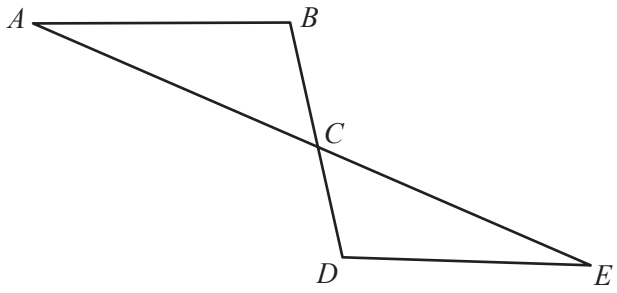
[Turn over

10 Factorise completely.

$3x^2y - 5xyz$

Answer ..... [2]

11



NOT TO SCALE

The diagram shows two straight lines, *AE* and *BD*, intersecting at *C*.
Angle *ABC* = angle *EDC*.
Triangles *ABC* and *EDC* are congruent.

Write down **two** properties of line segments *AB* and *DE*.

Answer AB and *DE* are .....

and ..... [2]

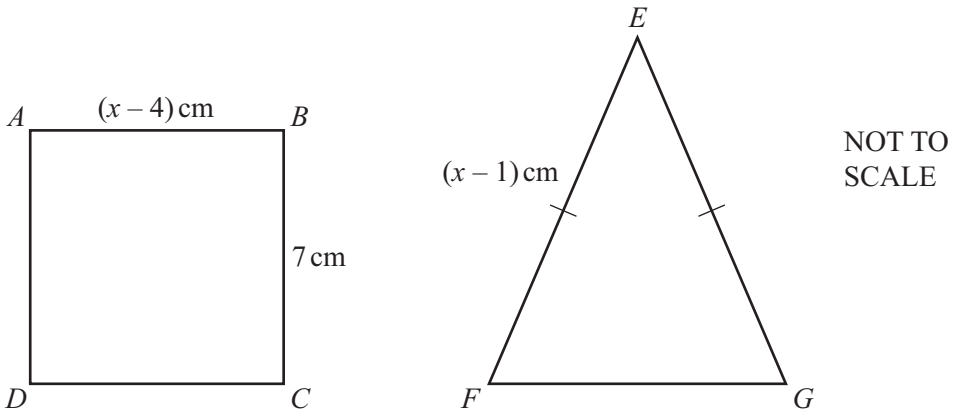
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12 Without using a calculator, work out $\frac{4}{5} \div 2\frac{2}{3}$.

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

Answer ..... [3]

13



(a) *ABCD* is a square.

Find the value of x.

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

(b) Square *ABCD* and isosceles triangle *EFG* have the same perimeter.

Work out the length of *FG*.

Answer(b) FG = ... cm [2]

14 Bernard invests $480 at a rate of 4.5% per year compound interest.

Calculate the amount he receives at the end of 3 years.

Answer $ ..... [3]

---

15 A random sample of 200 families was taken from the families in a city.
The number of children in each family was recorded.
The results are shown in the table below.

Number of children in a family	0	1	2	3	4	5 or more
Number of families	25	41	73	42	13	6

(a) Find the relative frequency of families with 2 children.

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

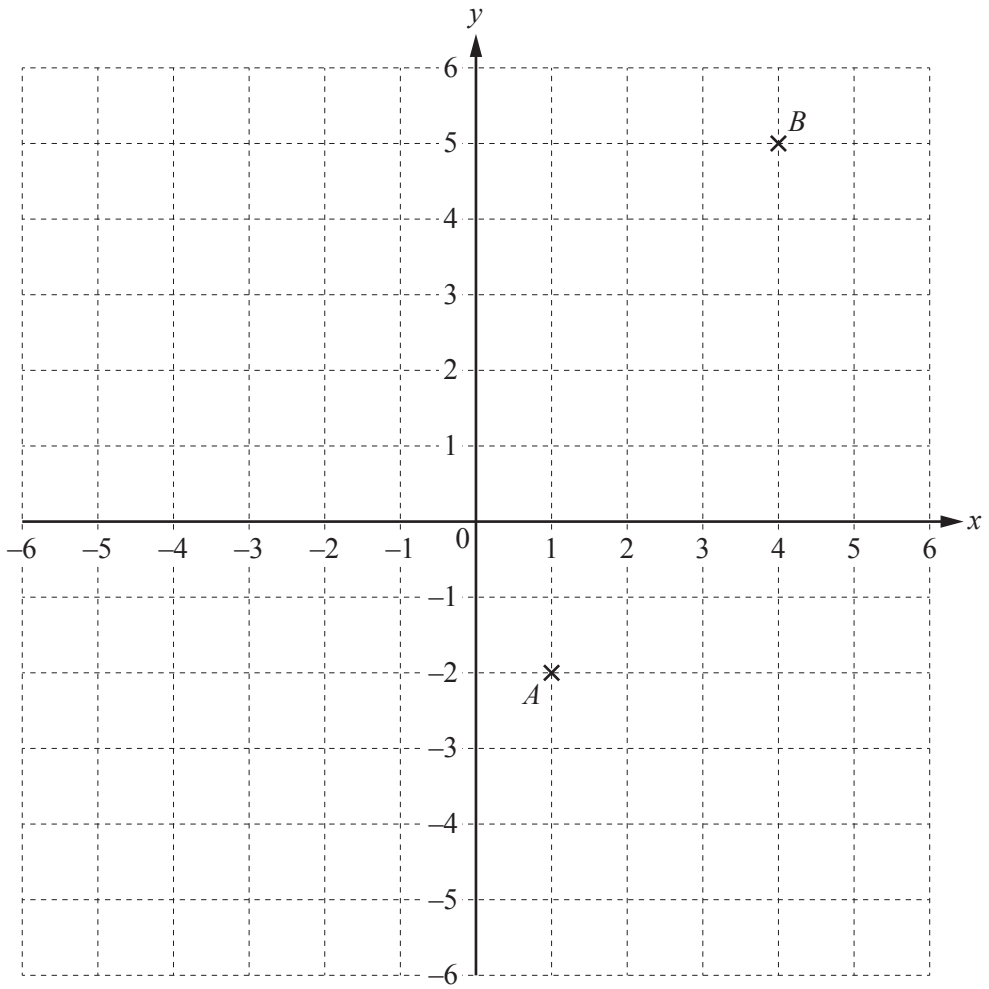
(b) There are 5400 families in the city.

Find an estimate of the number of families with 2 children.

Answer(b) ..... [2]

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The diagram shows two points, A and B.

(a) Write down the column vector $\overrightarrow{AB}$.

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

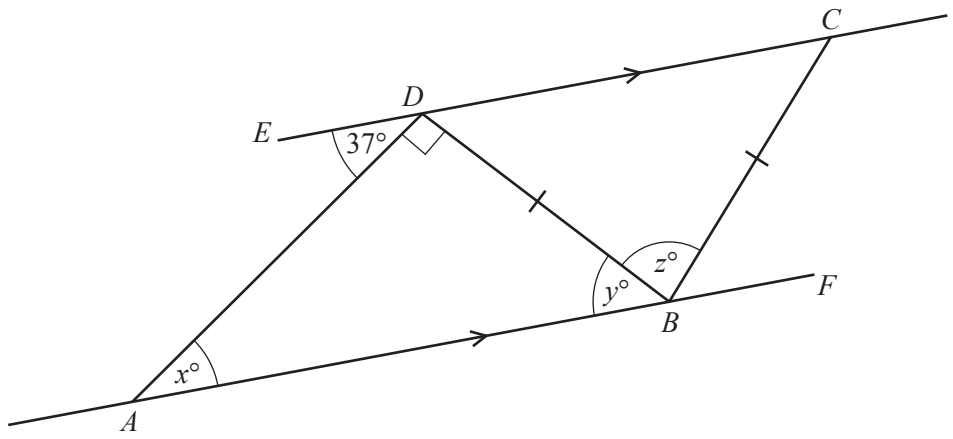
(b) $\overrightarrow{AC} = \begin{pmatrix} -5 \\ 2 \end{pmatrix}$

(i) On the grid, mark the point C. [1]

(ii) Write down the co-ordinates of C.

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

17



NOT TO SCALE

In the diagram, *ABF* is parallel to *EDC*.
Angle *EDA* = 37°, angle *ADB* is a right angle and *BC* = *BD*.

Find the value of

(a) *x*,

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

(b) *y*,

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

(c) *z*.

Answer(c) z = ... [2]

---

18 **(a)** Write down the next two terms in the following sequence.

73, 66, 59, 52, ... , ...

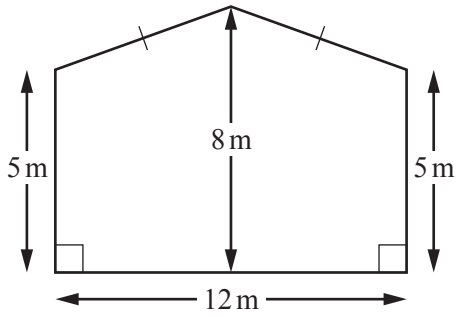
[2]

(b) Write down an expression for the *n*th term of the sequence in **part (a)**.

Answer(b) ..... [2]

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NOT TO SCALE

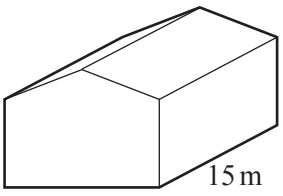
The diagram shows the front face of a barn.
The width of the barn is 12 m.
The height of the barn is 8 m.
The sides of the barn are both of height 5 m.

(a) Work out the area of the front face of the barn.

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

(b) The length of the barn is 15 m.

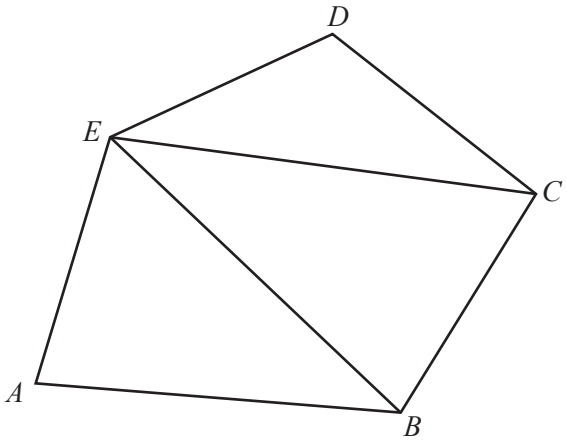
Work out the volume of the barn.



NOT TO SCALE

Answer(b) ..... m^3 [1]

20 (a)



ABCDE is a pentagon.

Explain why the diagram shows that the sum of the interior angles of a pentagon is 540°.
Do not measure any angles.

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

(b) Two interior angles of a pentagon are 79° and 53°.
The other three angles are in the ratio 1 : 3 : 4.

Calculate the size of each of these three angles.

Answer(b) ..... , ... , ... [4]

21 The average monthly temperatures (°C) in Silvas, Turkey, are shown in the table below.

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperature (°C)	–4	–3	2	8	13	17	19	20	16	11	8	–1

(a) Which month is the coldest?

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

(b) Work out the difference between the temperature in November and the temperature in December.

Answer(b) ..... °C [1]

(c) Find the median temperature.

Answer(c) ..... °C [2]

(d) Calculate the mean temperature.
Give your answer correct to 2 significant figures.

Answer(d) ..... °C [3]

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