Cambridge IGCSE

Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

CANDIDATE NAME

CENTRE NUMBER | | | | | |

CANDIDATE NUMBER | | | | |

4030049702

MATHEMATICS **0580/11**

Paper 1 (Core) **October/November 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.

1 Write these numbers in order of size, starting with the smallest.

5.024 0.524 5.204 5.0204

Answer ..... < ..... < ..... < ..... [1]
smallest

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2 At midnight the temperature in Newtown was –8 °C.
At noon the next day the temperature in Newtown was 9 °C.

Work out the rise in temperature from midnight to noon.

Answer ..... °C [1]

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3 Simplify $\frac{r^6}{r^2}$.

Answer ..... [1]

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4 **(a)** Work out $\frac{5}{12}$ of 168.

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

(b) Write $\frac{3}{8}$ as a decimal.

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

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5 Calculate.

(a) $3.2 \times (5.7 - 1.3) + 4.8$

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

(b) $\sqrt{2.54 - 0.85}$

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

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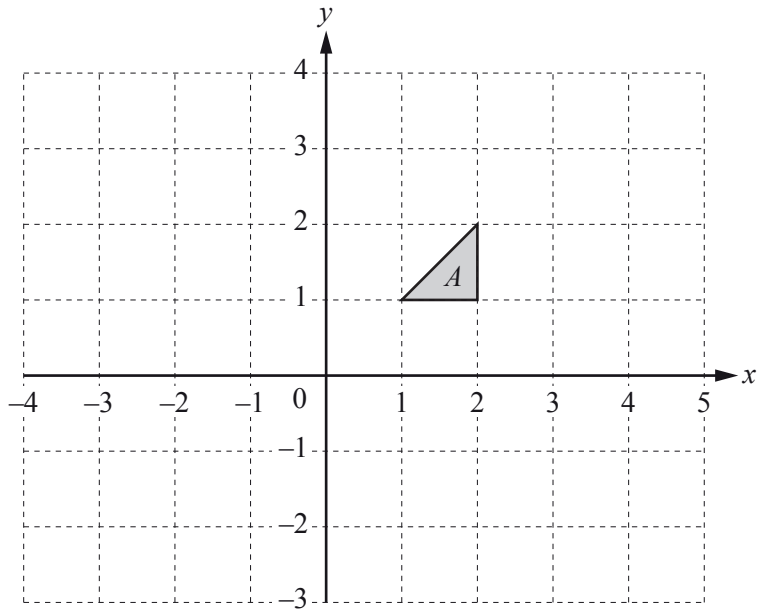
6 $\mathbf{p} = \begin{pmatrix} 4 \\ -2 \end{pmatrix}$ $\mathbf{q} = \begin{pmatrix} -1 \\ 3 \end{pmatrix}$

Work out $3\mathbf{p} - \mathbf{q}$.

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

7



Draw the image of shape A after a translation by the vector $\begin{pmatrix} 2 \\ -3 \end{pmatrix}$. [2]

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8 Pip and Ali share \$785 in the ratio Pip : Ali = 4 : 1.

Work out Pip's share.

Answer \$ ..... [2]

---

9 Jim scores the following marks in 8 tests.

7 8 8 y 6 9 10 5

His mean mark is 7.5 .

Calculate the value of y.

Answer y = ... [2]

---

10 By writing each number correct to 1 significant figure, estimate the value of $\dfrac{\sqrt{3.9} \times 29.3}{8.9 - 2.7}$.

Show all your working.

Answer ..... [2]

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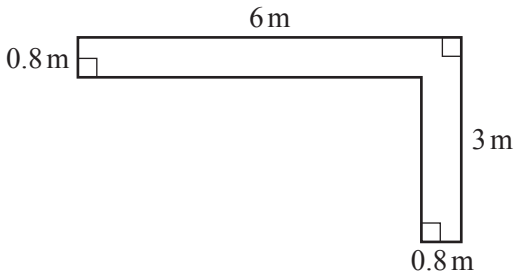
11 Without using a calculator, work out $\frac{2}{5} \div \frac{3}{4}$.

Give your answer as a fraction.
You must show each step of your working.

Answer ..... [2]

12



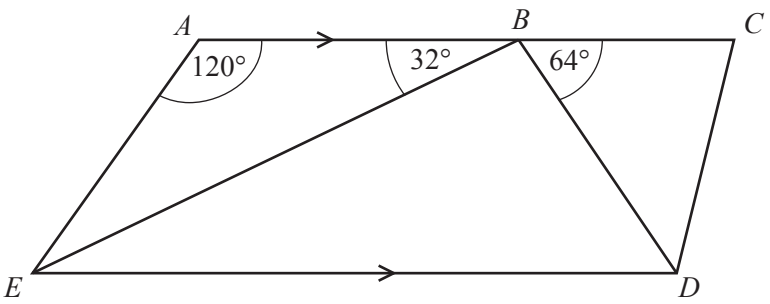
NOT TO SCALE

Leah is making a path in her garden using gravel.
The diagram shows the path.
A bag of gravel covers an area of $0.5\,m^2$.

Work out the number of bags of gravel Leah must buy to make the path.

Answer ..... [3]

13



NOT TO SCALE

The diagram shows quadrilateral *ACDE*.
AC is parallel to *ED* and *B* is a point on *AC*.
Angle *EAB* = 120°, angle *ABE* = 32° and angle *CBD* = 64°.

(a) Work out angle *EBD*.

Answer(a) Angle *EBD* = ... [1]

(b) Work out angle *AEB*.

Answer(b) Angle *AEB* = ... [1]

(c) Complete this statement.

Angle *BED* = angle *ABE* because they are ..... angles. [1]

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14 Work out the size of one interior angle of a regular 15-sided polygon.

Answer ..... [3]

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15 Chico has a bag of sweets.
He takes a sweet from the bag at random.
The table shows the probabilities of taking each flavour of sweet.

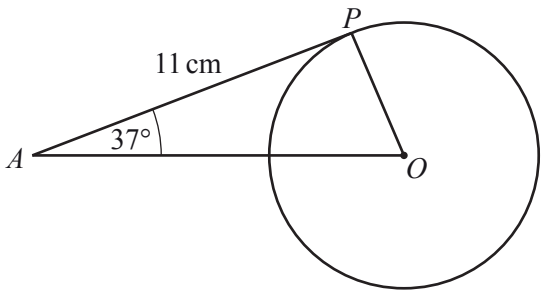
Flavour	Lemon	Lime	Strawberry	Blackcurrant	Orange
Probability	0.15	0.22		0.18	0.24

(a) Complete the table. [2]

(b) Find the probability that the sweet is lemon or lime.

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

16



NOT TO SCALE

In the diagram, AP is a tangent to the circle at P.
O is the centre of the circle, angle $PAO = 37°$ and $AP = 11$ cm.

(a) Write down the size of angle OPA.

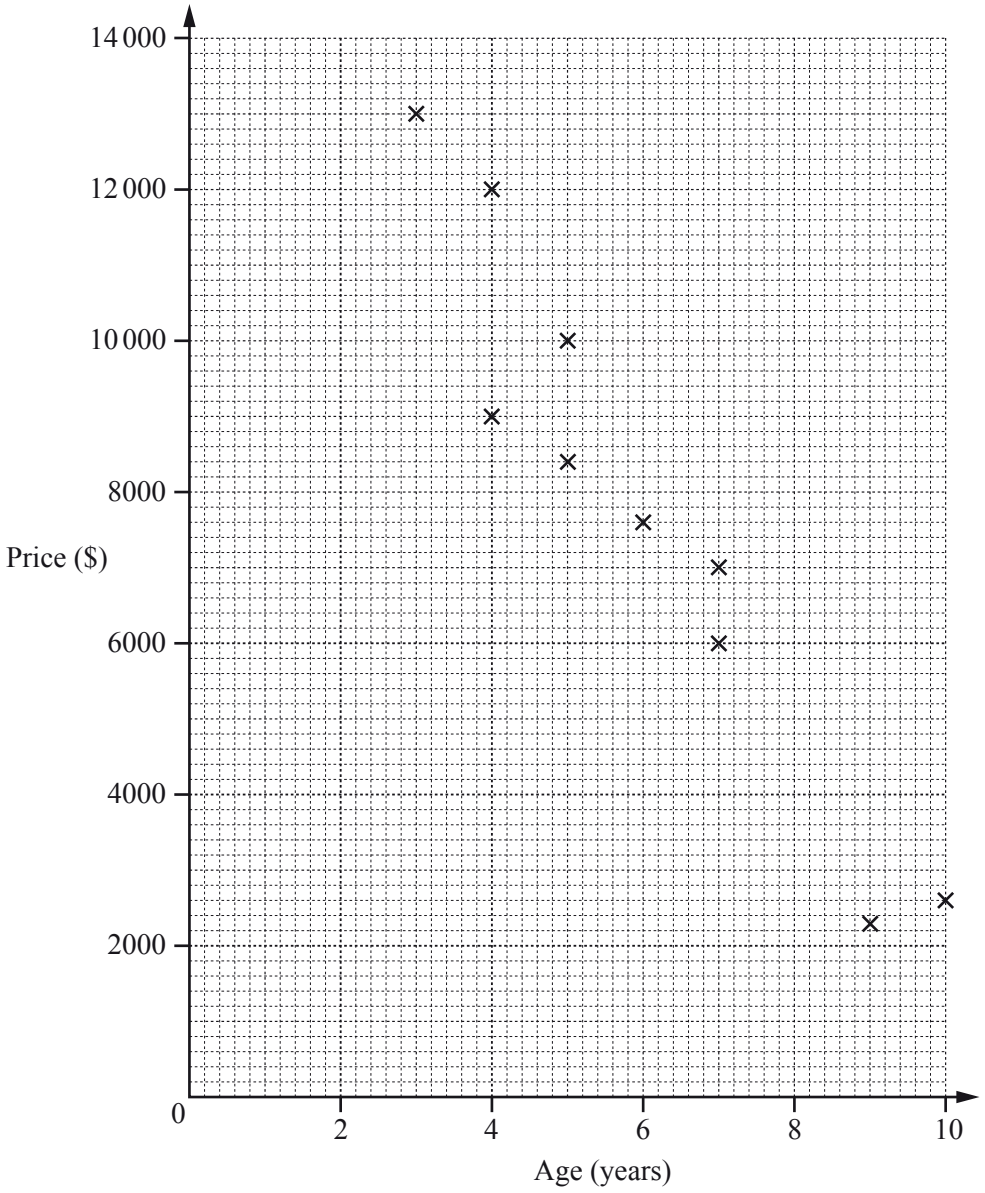
Answer(a) Angle OPA = ... [1]

(b) Work out the radius of the circle.

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

[Turn over

17 Amir looks at adverts for the same model of car.
The scatter diagram shows the age and price of each car.



(a) What type of correlation is shown on the scatter diagram?

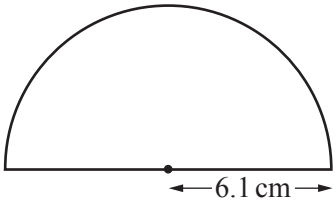
Answer(a) ..... [1]

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

(c) Use your line of best fit to estimate the price of a car that is 8 years old.

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

18



NOT TO SCALE

A protractor is a semi-circle of radius 6.1 cm.

Calculate the **perimeter** of the protractor.

Answer ..... cm [3]

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19 **(a)** $s = 4t + 3u$

Calculate s when $t = 2.6$ and $u = -0.4$.

Answer(a) $s =$ ..... [2]

(b) Solve $5x - 7 = 10$.

Answer(b) $x =$ ..... [2]

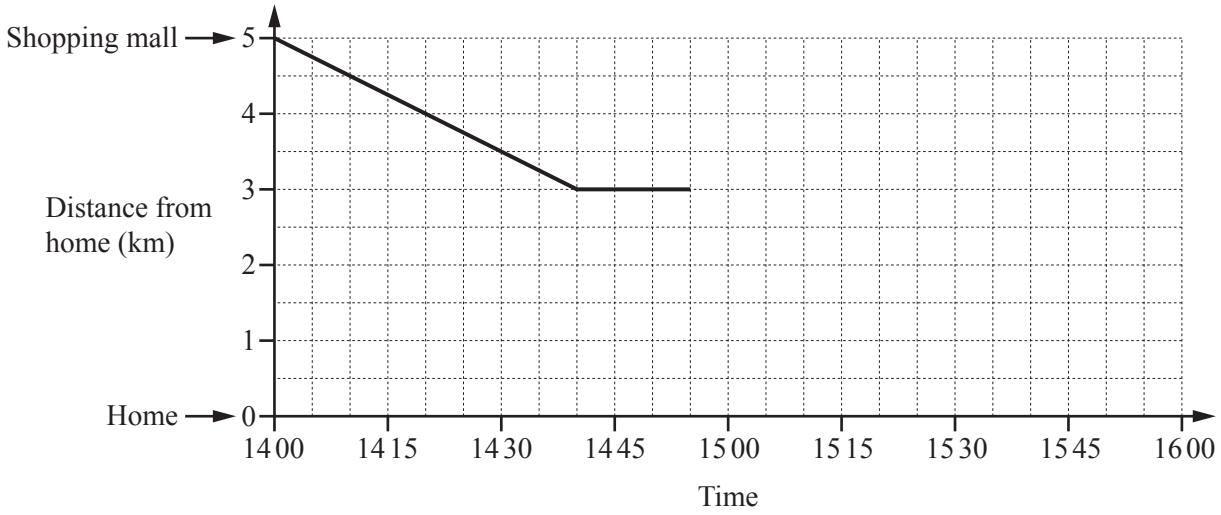
[Turn over

20 **(a)** Maria travels by bus to the shopping mall.
She leaves home at 11 50 and arrives at the shopping mall at 12 17.

How many minutes does it take Maria to travel from home to the shopping mall?

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

(b)



Maria walks home from the shopping mall.
The travel graph shows part of her journey.

(i) Maria stops at her friend's house on the way home.

How far from the shopping mall does her friend live?

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

(ii) Maria leaves her friend's house at 14 55.
She walks the rest of the way home at a constant speed of 4 km/h.

Complete the travel graph.

[2]

21 **(a)** Sara works for 28 hours each week.
She earns \$12.45 per hour.

Calculate how much she earns in one week.

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

(b) Sara invests \$750 for 3 years at a rate of 2.4% per year compound interest.

Calculate the total amount she will have at the end of the 3 years.

Answer(b) \$ ..... [3]

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22 **(a)** Write down the next term in each of these sequences.

(i) 5 9 13 17 . . .

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

(ii) 3 6 12 24 . . .

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

(b) Here are the first four terms in a different sequence.

2 7 12 17

Find an expression for the nth term of this sequence.

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

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