Cambridge IGCSE

Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

CANDIDATE NAME

CENTER NUMBER

CANDIDATE NUMBER

0089854678

MATHEMATICS (US) **0444/13**

Paper 1 (Core) **October/November 2015**

1 hour

Candidates answer on the Question Paper.

Additional Materials: Geometrical instruments

READ THESE INSTRUCTIONS FIRST

Write your Center 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.
CALCULATORS MUST NOT BE USED IN THIS PAPER.
All answers should be given in their simplest form.
If work is needed for any question it must be shown in the space provided.

The number of points is given in parentheses [ ] at the end of each question or part question.
The total of the points for this paper is 56.

This document consists of **11** printed pages and **1** blank page.

CAMBRIDGE International Examinations

Formula List

Area, A, of triangle, base b, height h.	$A = \frac{1}{2}bh$
Area, A, of circle, radius r.	$A = \pi r^2$
Circumference, C, of circle, radius r.	$C = 2\pi r$
Lateral surface area, A, of cylinder of radius r, height h.	$A = 2\pi rh$
Surface area, A, of sphere of radius r.	$A = 4\pi r^2$
Volume, V, of prism, cross-sectional area A, length l.	$V = Al$
Volume, V, of cylinder of radius r, height h.	$V = \pi r^2 h$
Volume, V, of sphere of radius r.	$V = \frac{4}{3}\pi r^3$

1 Write in figures the number six thousand and fifty four.

Answer ..... [1]

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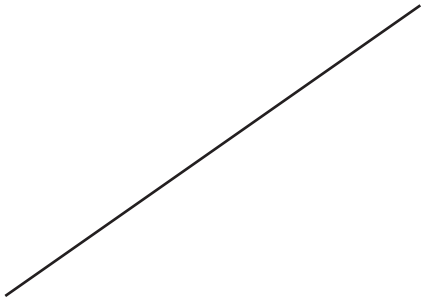
2 Measure the length of this line in centimeters.



Answer ..... cm [1]

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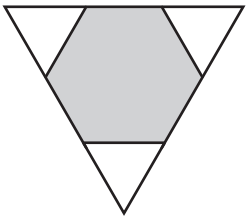
3 Write down the order of rotational symmetry of this shape.



Answer ..... [1]

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4 Write 168.9 correct to 2 significant digits.

Answer ..... [1]

---

5 Work out $24 - 4 \times (3 + 2)$.

Answer ..... [1]

[Turn over

6 The probability that it will rain on any day is $\frac{1}{5}$.

Work out the expected number of days it will rain in a month with 30 days.

Answer ..... [1]

---

7 11 12 13 14 15 16

From the list of numbers, write down

(a) the factors of 60,

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

(b) the prime numbers.

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

---

8 These are the first four terms in a sequence.

21 17 13 9

(a) Write down the next number in this sequence.

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

(b) Write down the rule for continuing the sequence.

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

---

9 Simplify.

$1 - 2u + u + 4$

Answer ..... [2]

---

10 **(a)** At 9 am the temperature was –3°C.
At 1pm the temperature had risen by 5°C.

Work out the temperature at 1pm.

Answer(a) .....°C [1]

(b) Work out $-7 - 2$.

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

---

11 Solve for s.

$$t = \frac{s + d}{v}$$

Answer s = ... [2]

---

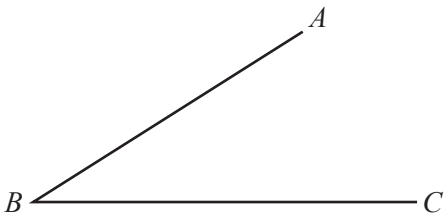
12 Write 72 as a product of its prime factors.

Answer ..... [2]

---

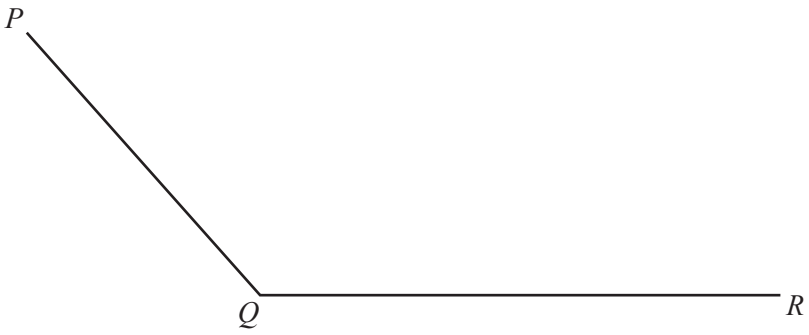
13 In this question, use a straight edge and compass only.

(a) Construct a copy of angle ABC.
The line BC has been drawn for you.



[2]

(b) Bisect the obtuse angle PQR.



[2]

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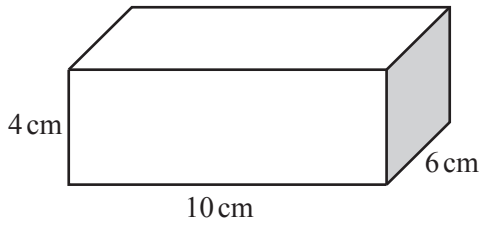
14 Here is a list of times, in seconds, that 8 people take to answer a question.

10 6 15 7 9 11 18 20

Work out the median time taken to answer the question.

Answer ..... s [2]

15



Work out the volume of this cuboid.
Give the units of your answer.

Answer .... [3]

---

16 Work out $\frac{2}{3} + \frac{1}{6} - \frac{1}{4}$, giving your answer as a fraction in its lowest terms.

Answer ..... [3]

---

17 **(a)** Expand.

$3(x + 7)$

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

(b) Factor completely.

$2x - 4x^2$

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

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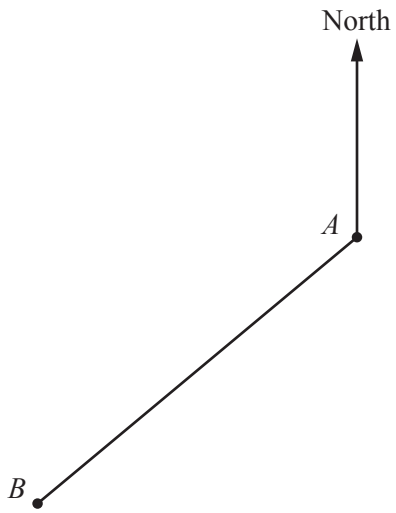
18 This scale drawing shows the positions of two towns, A and B, on a map.



(a) Measure the bearing of town B from town A.

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

(b) On the map, town C is 8 cm from town A on a bearing of 155°.

Mark the position of town C on the scale drawing. [2]

---

19 **(a)** Write 1.7×10^{-4} as an ordinary number.

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

(b) Work out $(3 \times 10^{4}) \times (2.5 \times 10^{-8})$.
Give your answer in scientific notation.

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

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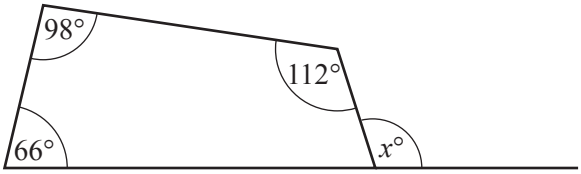
20 **(a)** The diagram shows a quadrilateral with one side extended.



NOT TO SCALE

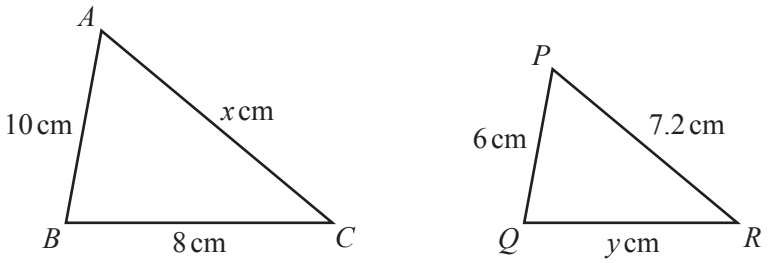
Find the value of x.

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

(b) Find the sum of the interior angles of a 12-sided polygon.

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

21



NOT TO SCALE

The diagram shows two similar triangles ABC and PQR.

Find the value of

(a) x,

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

(b) y.

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

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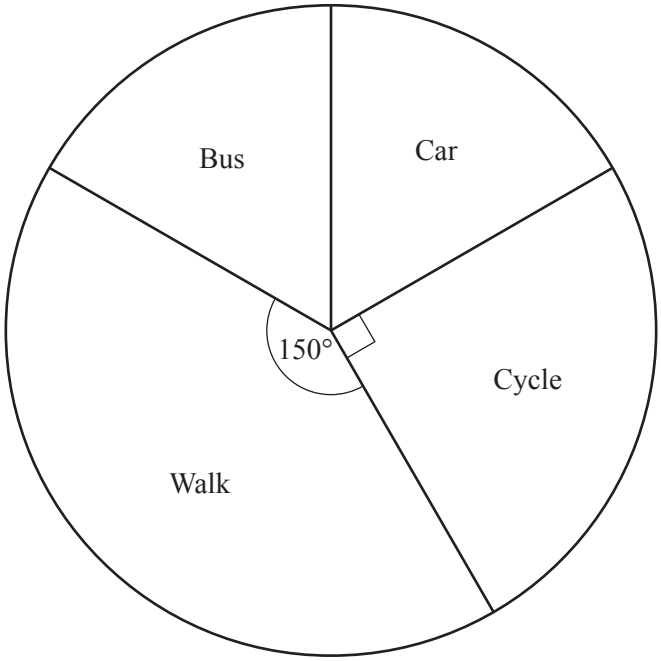
22 The pie chart shows how 120 students travel to school.



(a) What fraction of the students cycle to school?

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

(b) Work out how many students walk to school.

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

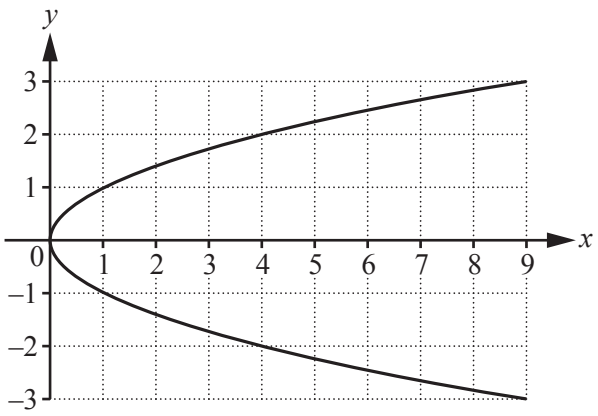
23 Solve the system of equations.
You must show all your working.

$$5x + 2y = 8$$
$$2x - 3y = 26$$

Answer $x =$ .....

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

24



Is the graph in the diagram the graph of a function?
Give a reason for your answer.

Answer ..... because .....

..... [2]

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