Cambridge IGCSE

Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

CANDIDATE NAME									
CENTER NUMBER						CANDIDATE NUMBER				

MATHEMATICS (US) **0444/11**

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

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.

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.	$V = \frac{4}{3}\pi r^3$

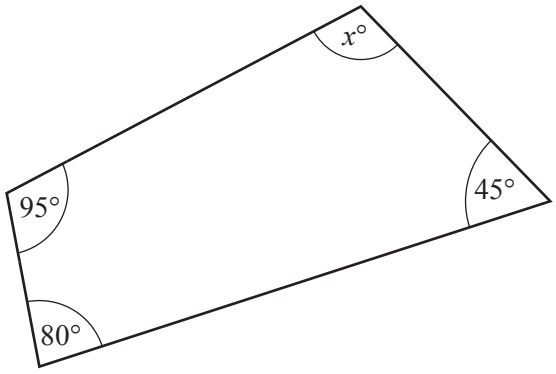
1 Write 4647 correct to the nearest 100.

..... [1]

2 Write 0.007 as a fraction.

..... [1]

3 The diagram shows a quadrilateral.



NOT TO SCALE

Find the value of x.

$x =$ ..... [1]

4 The nth term of a sequence is $5n - 3$.

Write down the first three terms of the sequence.

..... , ... , ... [1]

5 **(a)** Write 0.002 68 correct to 2 significant figures.

..... [1]

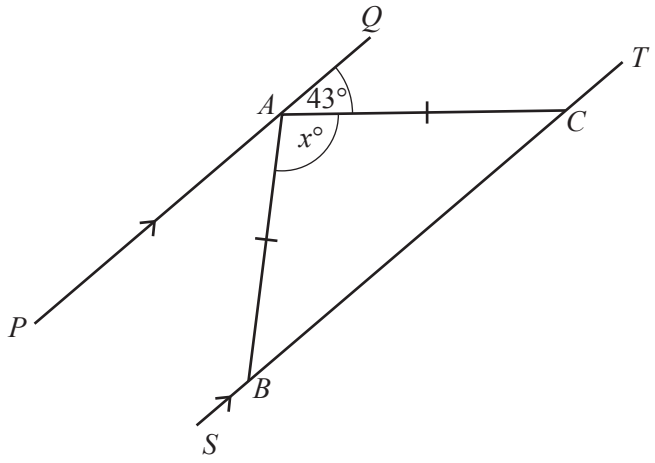
(b) Write 0.000 038 7 in scientific notation.

..... [1]

6 Find the value of $7x + 3y$ when $x = 12$ and $y = -6$.

..... [2]

7



NOT TO SCALE

The diagram shows two parallel lines PAQ and $SBCT$.
$AB = AC$ and angle $QAC = 43°$.

Find the value of x.

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

8 Solve the equation $\frac{y+2}{8} = 7$.

$y =$ ..... [2]

9 **(a)** Change 6.54 kilometers into meters.

..... m [1]

(b) Change 7850 cm^3 into liters.

..... liters [1]

10 The table shows the temperatures in a school yard at 8 am for five days in January.

Day	Temperature (°C)
Monday	−7
Tuesday	−12
Wednesday	−3
Thursday	−4
Friday	−5

(a) Which day was the warmest?

..... [1]

(b) Find the difference between the temperature on Monday and the temperature on Tuesday.

..... °C [1]

(c) Between 8 am and 3 pm on Thursday, the temperature increased by 6 °C.

Find the temperature at 3 pm on Thursday.

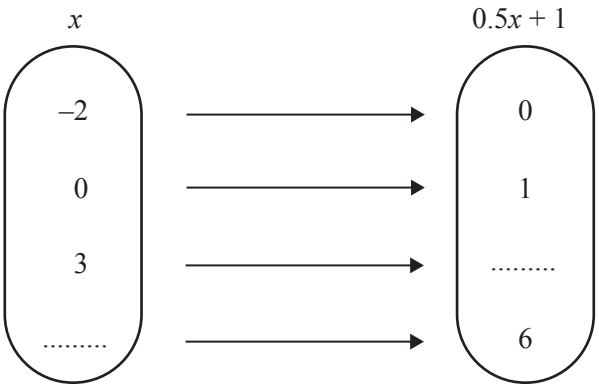
..... °C [1]

11 Expand and simplify.

$$6(2y - 3) - 5(y + 1)$$

..... [2]

12 Complete the mapping diagram for the function $f(x) = 0.5x + 1$.



[2]

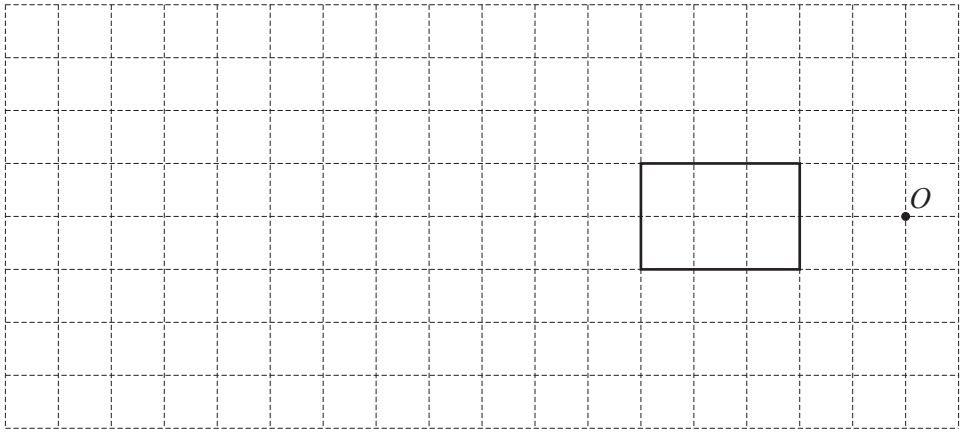
13 Work out the least common multiple (LCM) of 18 and 21.

..... [2]

14 Work out the size of one exterior angle of a regular octagon.

..... [2]

15 Enlarge the rectangle using a scale factor of 3 and center of enlargement O.



[2]

16 **(a)** A box contains 3 blue pens, 4 red pens, and 8 green pens only.
A pen is chosen at random from the box.

Find the probability that this pen is green.

..... [1]

(b) A cube has only one of its six faces painted yellow.
This cube is rolled 240 times.

Work out the expected number of times that it lands on the yellow face.

..... [1]

17 **(a)** Simplify.

$$(x^3)^4$$

..... [1]

(b) $4^w = \frac{1}{16}$

Find the value of w.

$w =$ ..... [1]

18 π 3^{-2} $3\frac{4}{7}$ 33.3% $\sqrt{3}$ 0.3 3^{999}

From this list, write down the two numbers that are irrational.

..... , ... [2]

19 **(a)** Here is a description of a quadrilateral.

It has 4 right angles.
It has 2 lines of symmetry.
It has rotational symmetry of order 2.

Write down the mathematical name of this quadrilateral.

..... [1]

(b) Write down two geometrical properties of a parallelogram.

1. .....

2. ..... [2]

20 Omar asks 10 people how many times they visited the movie theater in one month.
The results are shown below.

1	1	3	2	0
0	3	1	4	2

(a) **(i)** Find the mode.

..... [1]

(ii) Work out the mean.

..... [2]

(b) Omar wants to show his results in a pie chart.

Work out the sector angle for the people who visited the movie theater 3 times.

..... [2]

21 Factor completely.

(a) $10 + 16w$

..... [1]

(b) $12tx - 8t^2$

..... [2]

22 Work out $1\frac{3}{4} \times \frac{6}{35}$.

Give your answer as a fraction in its simplest form.

..... [3]

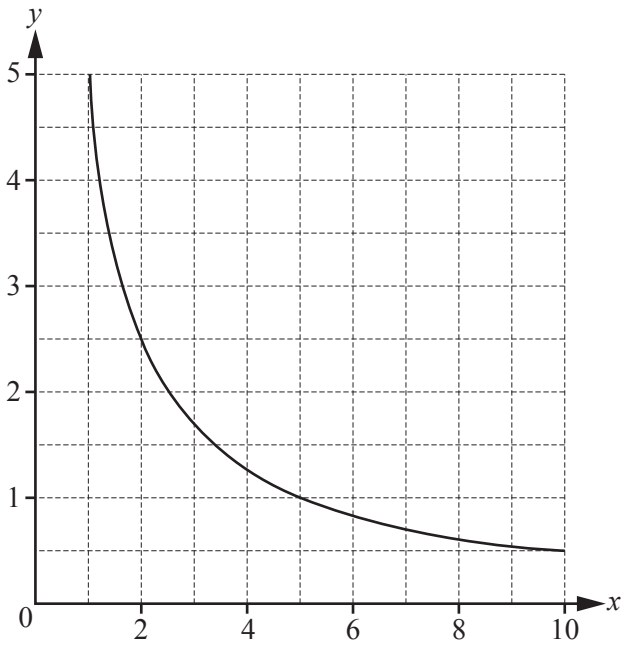
23 Solve the system of linear equations.
You must show all your working.

$$3x + 10y = 106$$
$$5x - 4y = 1$$

$x =$ .....

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

24



The diagram shows the graph of the function $y = f(x)$ where $f(x) = \frac{5}{x}$ for $1 \leqslant x \leqslant 10$.

Write down the range of this function.

..... [2]

25 A store rents out kayaks for trips on a nearby lake.

The profit, P dollars, made from renting out n kayaks for a week is given by the function

$$P(n) = 180n - 20.$$

(a) The store has a stock of 100 kayaks.

The store manager says

'n can be any value between 0 and 100.'

Give one reason why the manager is not correct.

.....

..... [1]

(b) One week, the store makes \$5380 profit from renting out kayaks.

How many kayaks were rented out that week?

..... [2]

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