Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER			

7748862035

CAMBRIDGE INTERNATIONAL MATHEMATICS **0607/13**

Paper 1 (Core) **October/November 2016**

45 minutes

Candidates answer on the Question Paper.

Additional Materials: 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.
Do not use staples, paper clips, glue or correction fluid.
You may use an HB pencil for any diagrams or graphs.
DO **NOT** WRITE IN ANY BARCODES.

Answer **all** the questions.
CALCULATORS MUST NOT BE USED IN THIS PAPER.
All answers should be given in their simplest form.
You must show all the relevant working to gain full marks and you will be given marks for correct methods even if your answer is incorrect.
The number of marks is given in brackets [ ] at the end of each question or part question.
The total number of marks for this paper is 40.

IB16 11_0607_13/FP
© UCLES 2016

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.	$C = 2\pi r$
Curved surface area, A, of cylinder of radius r, height h.	$A = 2\pi rh$
Curved surface area, A, of cone of radius r, sloping edge l.	$A = \pi rl$
Curved 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 pyramid, base area A, height h.	$V = \frac{1}{3}Ah$
Volume, V, of cylinder of radius r, height h.	$V = \pi r^2 h$
Volume, V, of cone of radius r, height h.	$V = \frac{1}{3}\pi r^2 h$
Volume, V, of sphere of radius r.	$V = \frac{4}{3}\pi r^3$

© UCLES 2016

Answer **all** the questions.

1 Here is a list of numbers.

2 3 4 5 6

From this list, write down

(a) the factors of 18,

..... [1]

(b) the square number,

..... [1]

(c) a prime number.

..... [1]

2 Write 0.03 as a fraction.

..... [1]

3 A movie is 2 hours 40 minutes long.
It starts at 10 40.

At what time does it finish?

..... [1]

4 Work out.

(a) $20 - 8 \times 2$

..... [1]

(b) $2 \times 20 - 8$

..... [1]

© UCLES 2016

5 The table shows the number of books borrowed each day from a library during one week.

Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Number of books	436	297	735	626	920	1297

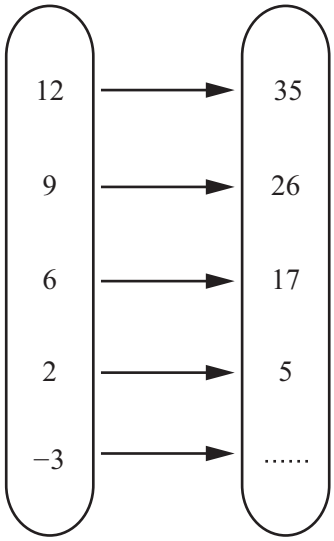
(a) On which day was the fewest number of books borrowed?

..... [1]

(b) Find the range of the number of books borrowed.

..... [1]

6 Complete the mapping diagram.



[1]

7 **(a)** Write 0.08219 correct to 3 decimal places.

..... [1]

(b) Write 60 952 correct to 3 significant figures.

..... [1]

8 Write down the next two numbers in this sequence.

19, 14, 9, 4, ... , ...

[2]

© UCLES 2016

9



NOT TO SCALE

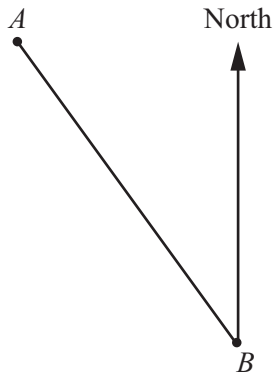
The rectangle is enlarged by a scale factor of 4.

Write down the size of the enlarged rectangle.

Length ..... cm

Width ..... cm [2]

10



Measure the bearing of A from B.

..... [1]

11 Write down the equation of a line parallel to $y = 3x + 5$.

..... [1]

12 Find the area of a circle of diameter 12 cm.
Give your answer in terms of π.

..... cm^2 [2]

13 The area of a floor is $25\,m^2$.
Jenny thinks this is the same as $2\,500\,cm^2$.

Is Jenny correct?
Explain your answer.

..... because .....

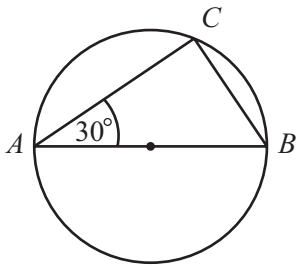
..... [1]

14 The exterior angle of a regular polygon is 40°.

Find the number of sides of this polygon.

..... [2]

15



NOT TO SCALE

AB is the diameter of the circle and *C* is a point on the circumference.

Work out the size of angle *ABC*.

Angle *ABC* = ... [2]

16 **(a)** Simplify.

(i) $3^0 \times 6$

..... [1]

(ii) $\left(\frac{1}{3}\right)^3$

..... [1]

(b) Find the value of n when $2^{n+1} = 16$.

..... [1]

© UCLES 2016

17 Twenty students in a class each solve a puzzle.

The time taken, t minutes, by each student to solve the puzzle is shown in the table.

(a) Complete the table.

Time (minutes)	Number of students	Midpoint
$0 < t \leqslant 2$	1	
$2 < t \leqslant 4$	6	
$4 < t \leqslant 6$	6	
$6 < t \leqslant 8$	6	
$8 < t \leqslant 10$	1	
Total	20	

[1]

(b) Find an estimate for the mean time taken to solve the puzzle.

..... min [3]

18 **(a)** Complete the statement using one of the symbols $<$, $=$ or $>$.

7 4

[1]

(b) Write down the largest integer value, x, such that

(i) $x \leqslant -3$,

..... [1]

(ii) $2x < 11$.

..... [1]

19 Describe the **single** transformation that maps the graph of $y = x^2$ onto the graph of $y = x^2 - 2$.

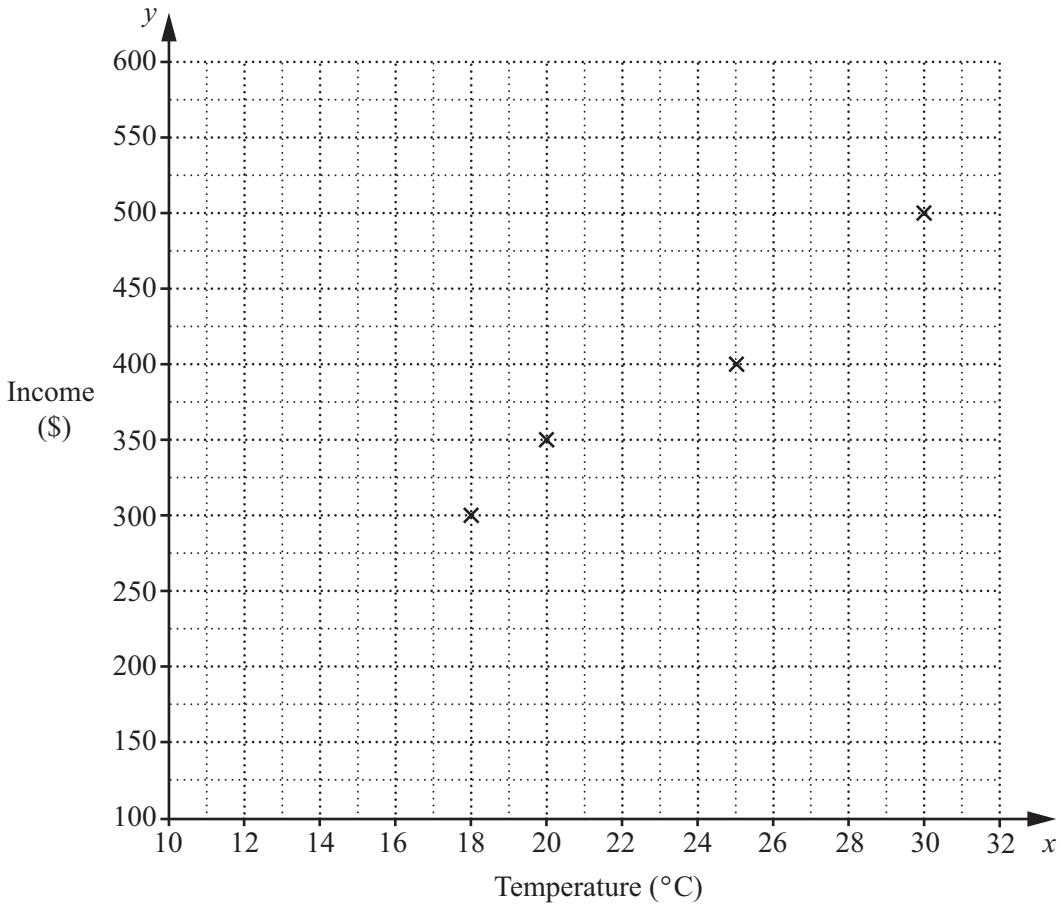
..... [2]

Question 20 is printed on the next page.

20 The table shows the maximum daily temperature, x°C, and the daily income, \$$y$, of an ice cream salesman.

Temperature (x°C)	25	18	30	20	25	20	22	28	15
Income (\$$y$)	400	300	500	350	450	400	450	500	250

(a) Complete the scatter diagram.
The first four points have been plotted for you.



[2]

(b) Write down the type of correlation shown on the scatter diagram.

.....

[1]

Permission to reproduce items where third-party owned material protected by copyright is included has been sought and cleared where possible. Every reasonable effort has been made by the publisher (UCLES) to trace copyright holders, but if any items requiring clearance have unwittingly been included, the publisher will be pleased to make amends at the earliest possible opportunity.

To avoid the issue of disclosure of answer-related information to candidates, all copyright acknowledgements are reproduced online in the Cambridge International Examinations Copyright Acknowledgements Booklet. This is produced for each series of examinations and is freely available to download at www.cie.org.uk after the live examination series.

Cambridge International Examinations is part of the Cambridge Assessment Group. Cambridge Assessment is the brand name of University of Cambridge Local Examinations Syndicate (UCLES), which is itself a department of the University of Cambridge.