Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER			

8403157003

CAMBRIDGE INTERNATIONAL MATHEMATICS **0607/12**

Paper 1 (Core) **May/June 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.

This document consists of **8** printed pages.

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

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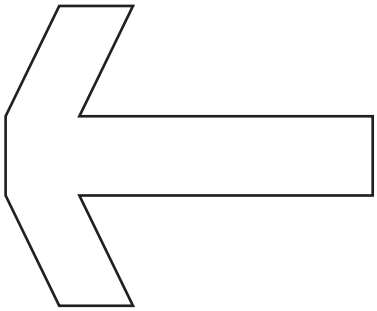
Answer **all** the questions.

1 Ben takes 1 hour 5 minutes to do his homework.
Alisa takes 20 minutes less.

Work out how long Alisa takes.
Give your answer as a fraction of an hour.

..... hour [2]

2 Draw all the lines of symmetry on this shape.

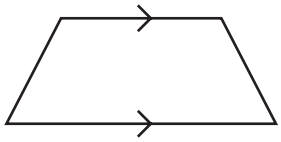


[1]

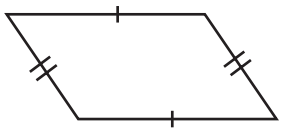
3 Write down the mathematical name of each of these shapes.
The first shape has been named for you.



Rectangle



.....



.....



.....

[3]

4 Write down the value of

(a) $\sqrt{81}$,

..... [1]

(b) $\sqrt[3]{8}$.

..... [1]

5 **(a)** Write 30% as a fraction.

..... [1]

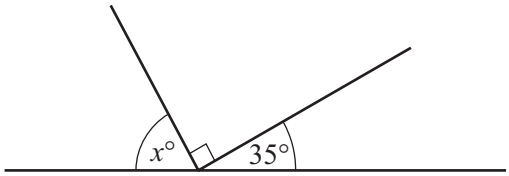
(b) Write $\frac{18}{20}$ as a percentage.

..... % [1]

(c) Work out 15% of 340 metres.

..... m [2]

6 **(a)**

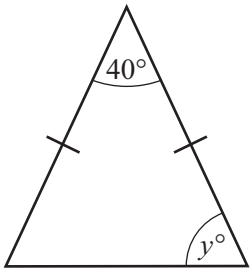


NOT TO SCALE

Find the value of x.

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

(b)



NOT TO SCALE

Find the value of y.

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

7 Work out.

$$\frac{3}{5} \times \frac{2}{7}$$

..... [2]

8 **(a)** Write 2.96 correct to 1 significant figure.

..... [1]

(b) Find the approximate value of

$$\frac{9.1}{2.96} + \frac{30.5}{5.95}.$$

..... [2]

(c) Is your answer to **part (b)** higher or lower than the actual answer?
Give a reason for your answer.

..... because .....

..... [1]

9 A fair 6-sided die is numbered 1, 2, 3, 4, 5 and 6.
The die is rolled once.

Find the probability that the number on the top face is

(a) 2,

..... [1]

(b) not 2.

..... [1]

10 **(a)** Factorise completely.

$$x - 5x^2$$

..... [1]

(b) $r = \dfrac{2a - 3b}{c}$

Find the value of r when $a = 5$, $b = 2$ and $c = -5$.

$r =$ ..... [3]

11 Solve the following simultaneous equations.

$$2x + 5y = 15$$
$$2x - 3y = 7$$

$x =$ .....

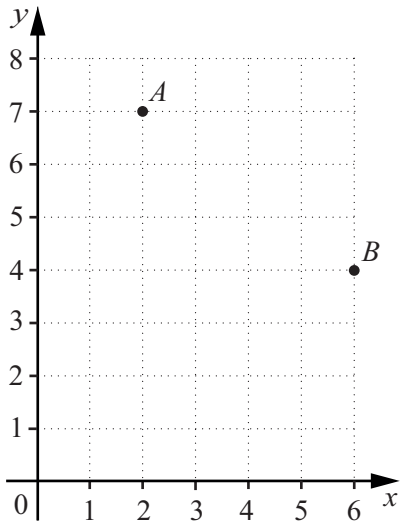
$y =$ ..... [2]

12 List the integer values of n for which $3 \leqslant 3n < 15$.

..... [2]

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13



(a) Find the vector $\overrightarrow{AB}$.

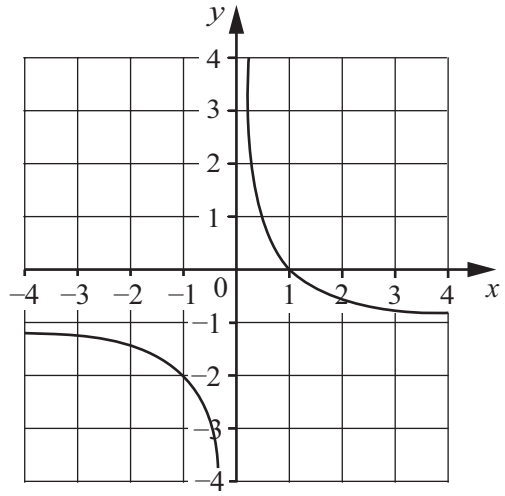
$\begin{pmatrix} \\ \end{pmatrix}$ [2]

(b) $\overrightarrow{BC} = \begin{pmatrix} -2 \\ -1 \end{pmatrix}$.

On the grid above, plot and label the point C.

[1]

14 The diagram shows the graph of $y = f(x)$.

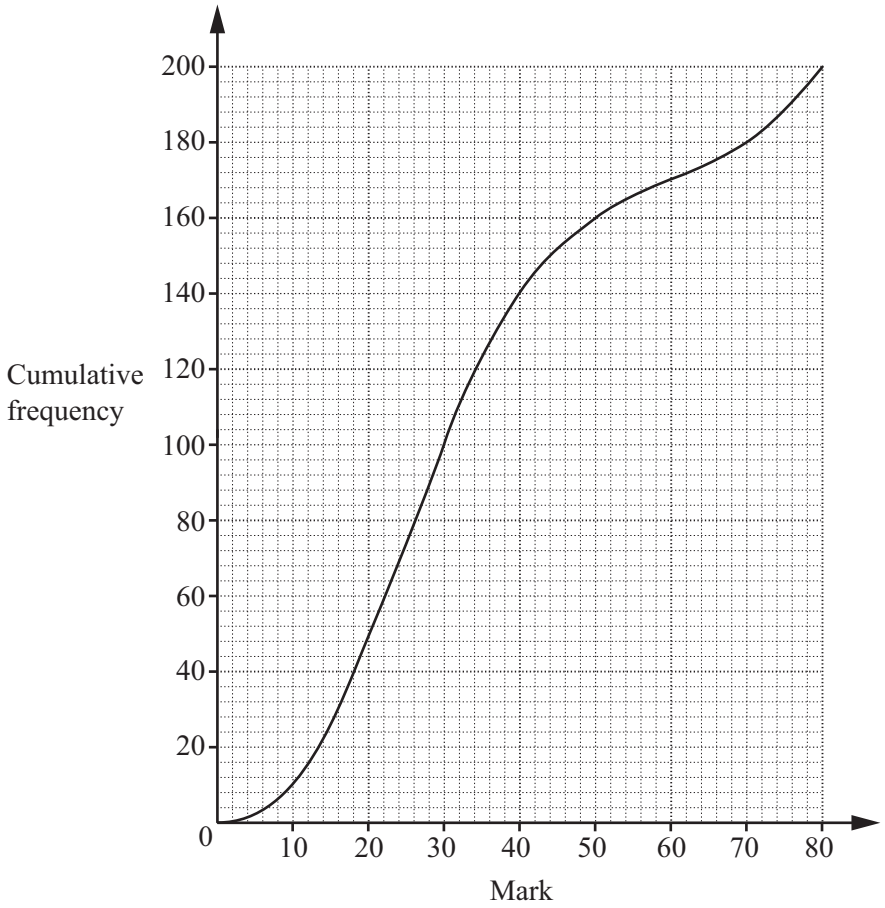


Write down the equations of the two asymptotes of the graph.

..... and ..... [2]

Question 15 is printed on the next page.

15



The diagram shows a cumulative frequency curve for the marks of 200 students in a test.

Estimate

(a) the median mark,

..... [1]

(b) the interquartile range.

..... [2]

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