UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
International General Certificate of Secondary Education

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER			

0613595201

CAMBRIDGE INTERNATIONAL MATHEMATICS **0607/12**

Paper 1 (Core) **May/June 2012**

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, highlighters, glue or correction fluid.
You may use a 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.

For Examiner's Use

This document consists of **9** printed pages and **3** blank pages.

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

Answer **all** the questions.

For Examiner's Use

1 **(a)** Work out $(4 - 7)^2$.

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

(b) Write down the value of $\sqrt{144}$.

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

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2 **(a)** Write 0.00724538 correct to 3 significant figures.

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

(b) Write your answer to **part (a)** in standard form.

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

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3 **(a)** Write down the first three multiples of 6.

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

(b) Find the lowest common multiple of 6 and 15.

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

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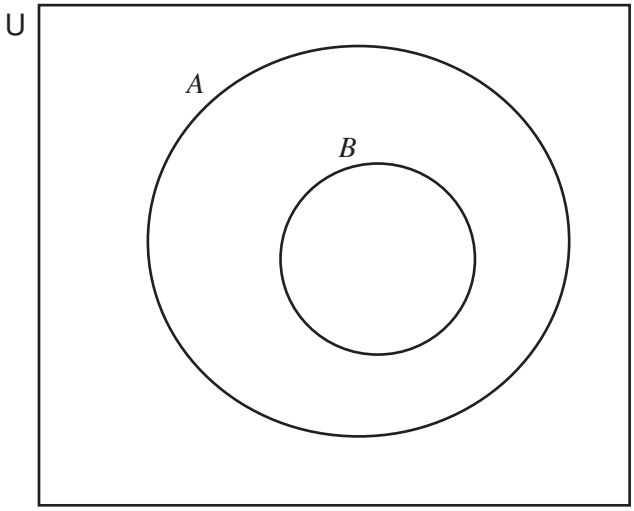
4 In the Venn diagram shade the region $A \cap B'$.



[1]

5 Peter buys one ticket in the school raffle.
The school sells 1000 tickets.
The winning ticket is drawn at random.

What is the probability that Peter does **not** have the winning ticket?

Answer ..... [2]

For Examiner's Use

6 **(a)** Simplify.

$$7(x - 2) - 3(3 + x)$$

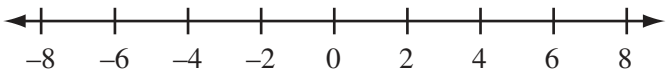
Answer (a) ..... [2]

(b) Solve the inequality.

$$7(x - 2) - 3(3 + x) < 1$$

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

(c) Show your answer to **part (b)** on the number line below.



[2]

For Examiner's Use

7 **(a)** Write as a single fraction.

$$\frac{3x}{4} + \frac{x}{3}$$

Answer (a) ..... [2]

(b) Simplify.

$$\frac{18x^7}{6x^5}$$

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

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8 The first five terms of a sequence are 2, 5, 10, 17, 26.

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

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

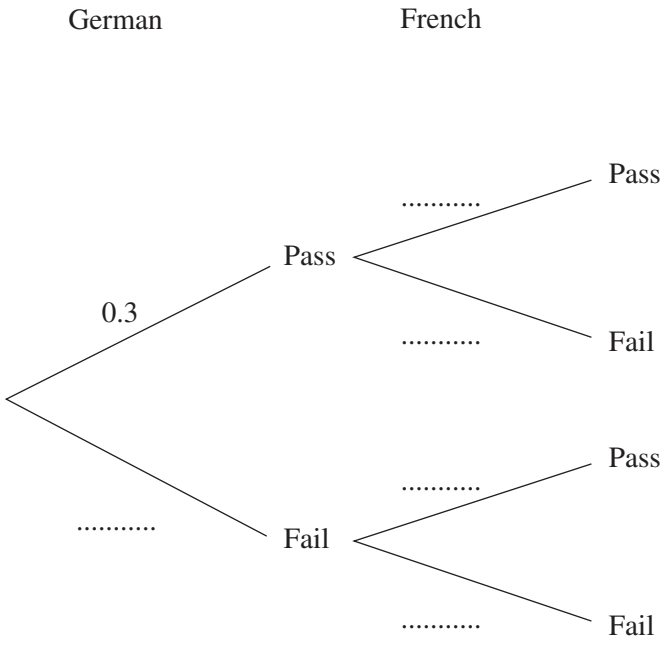
(b) Find the nth term of this sequence.

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

For Examiner's Use

9 Alice takes examinations in German and French.
The probability that she passes German is 0.3 .
The probability that she passes French is 0.6 .

(a) Complete the tree diagram.



[2]

(b) Work out the probability that Alice passes German and fails French.

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

For Examiner's Use

10 Lucy counts the number of words in each sentence of a film review.
The number of words in each sentence is shown below.

7 8 12 7 9 11 4 12 8 12

Find

(a) the mode,

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

(b) the mean,

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

(c) the range.

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

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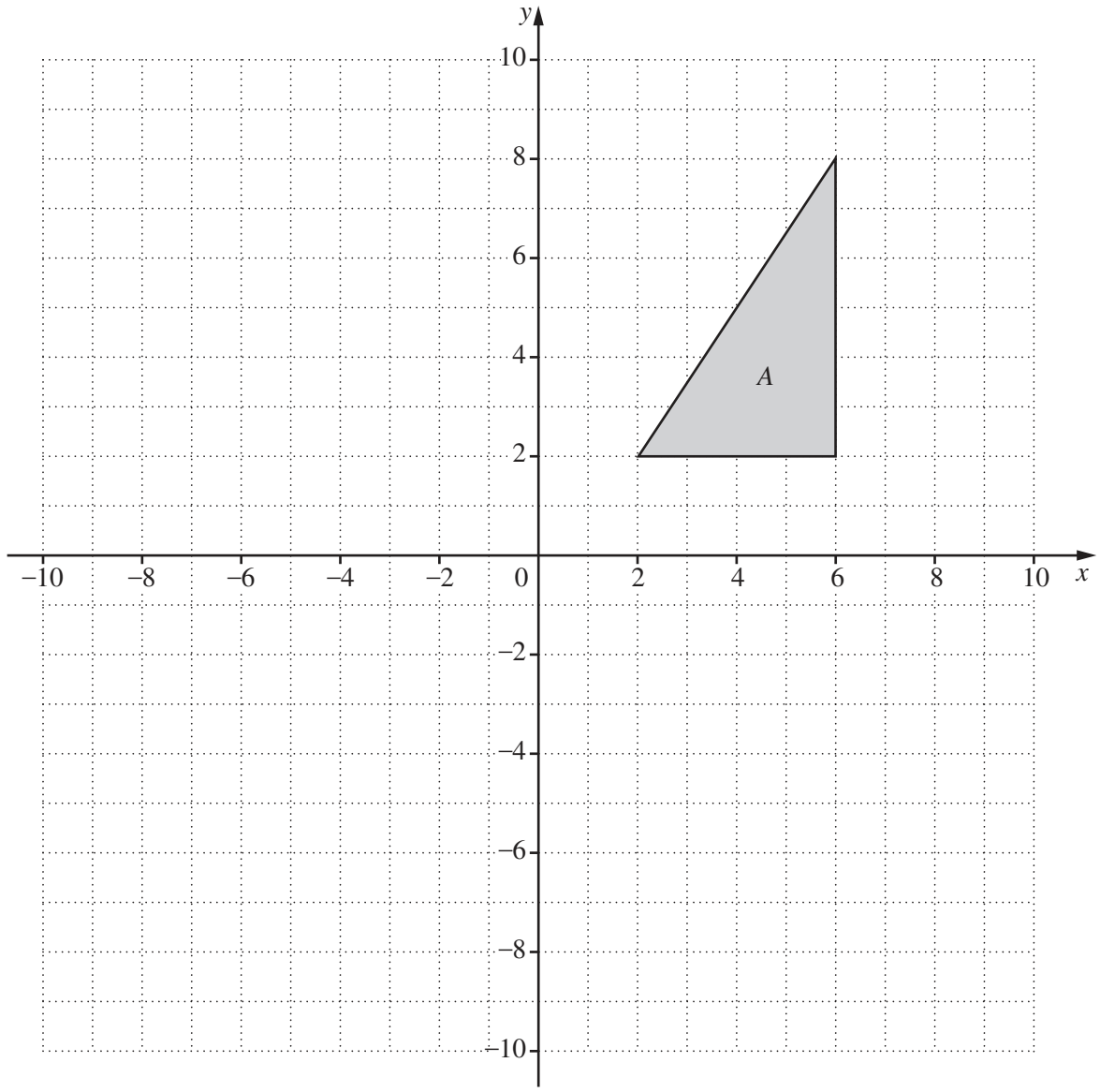
11 One lap of the Melbourne Grand Prix circuit is 5200 metres.
A racing driver completes a lap in 1.3 minutes.

Calculate his average speed in **kilometres per hour**.

Answer ..... km/h [3]

For Examiner's Use

12



(a) Reflect triangle A in the x-axis.
Label it B. [1]

(b) Translate triangle A by the vector $\begin{pmatrix} -6 \\ -10 \end{pmatrix}$.
Label it C. [2]

(c) Rotate triangle A 90° anti-clockwise about centre (2, 2).
Label it D. [2]

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