



UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
International General Certificate of Secondary Education

CANDIDATE NAME

CENTRE NUMBER

CANDIDATE NUMBER

* 6 7 3 3 4 1 8 1 3 9 *

CAMBRIDGE INTERNATIONAL MATHEMATICS **0607/01**
Paper 1 (Core) **November 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 **10** printed pages and **2** 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.

- 1 (a) Write 43 200 correct to the nearest thousand.

Answer (a) [1]

- (b) Write 43 200 in standard form.

Answer (b) [1]

- 2 (a) Complete the following.

$$\text{.....} \times \sqrt{36} = 30 \quad [1]$$

- (b) Work out $10 + 8 \div 2$.

Answer (b) [1]

- 3 Two adults and one child buy tickets to fly from Vienna to Paris.
The adult ticket price is \$44.

The child ticket price is $\frac{3}{4}$ of the adult price.

- (a) Write down the **total** cost of two adult tickets and one child ticket.

Answer (a) \$ [2]

- (b) The aircraft leaves Vienna airport at 10 45 and arrives in Paris at 13 15.

- (i) How long, in hours and minutes, does the flight take?

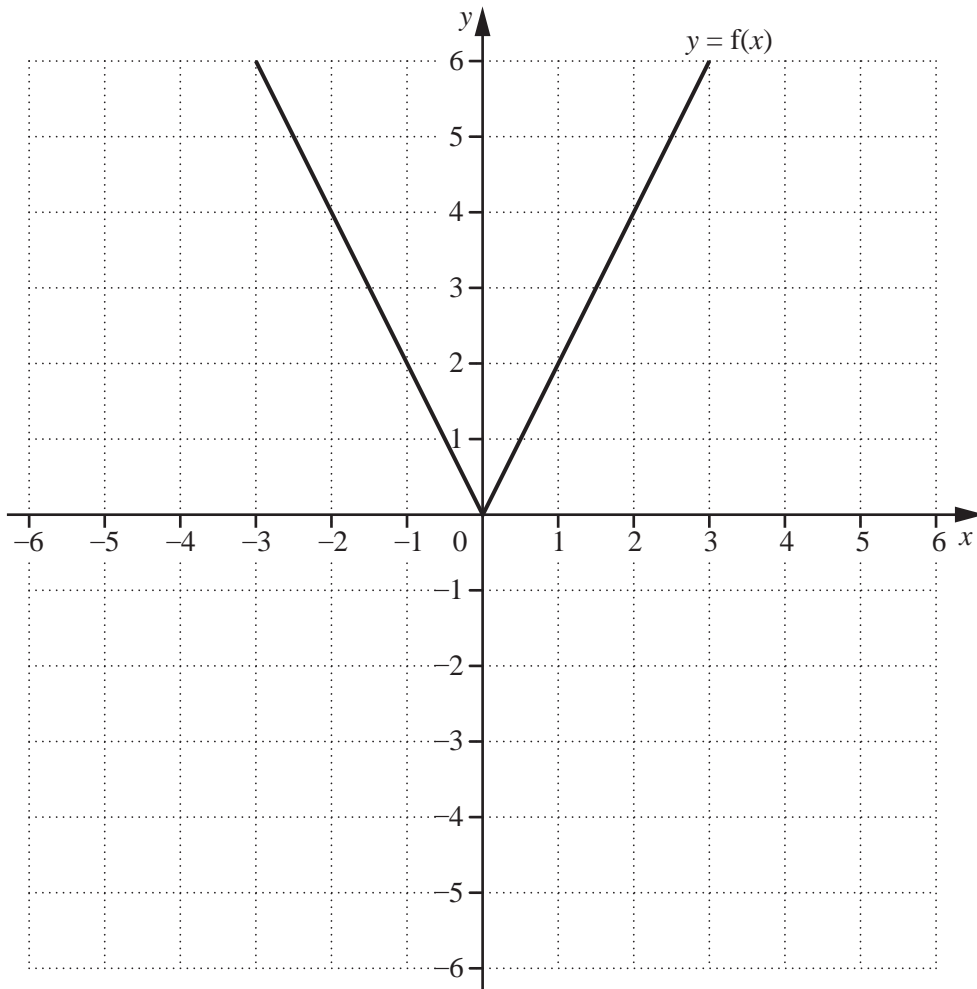
Answer (b)(i) h min [1]

- (ii) The distance from Vienna to Paris is 1000 km.

Find the average speed of the aircraft.

Answer (b)(ii) km/h [2]

- 4 The diagram shows the graph of the function $y = f(x)$ for $-3 \leq x \leq 3$.



- (a) Write down the range of $y = f(x)$ for $-3 \leq x \leq 3$.

Answer (a) [1]

- (b) On the same diagram, sketch the graph of $y = f(x - 3)$. [1]

- (c) Describe the **single** transformation that maps $y = f(x)$ onto $y = f(x) - 3$.

Answer (c) [2]

- 5 A bag contains yellow, blue and green discs.
There are 60 discs in the bag.

One disc is chosen at random.

The probability that the disc is yellow is $\frac{1}{10}$.

The probability that the disc is green is $\frac{3}{10}$.

- (a) Find the probability that the disc is blue.

Answer (a) [2]

- (b) Work out how many discs are green.

Answer (b) [1]

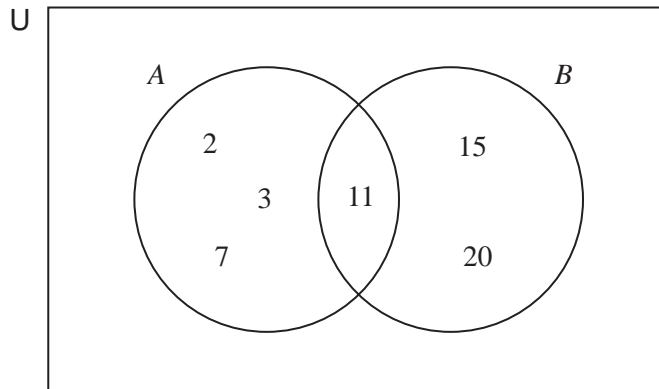
6

$$A = \frac{3\pi r^2}{2}$$

Make r the subject of the formula.

Answer $r =$ [3]

7 The Venn diagram shows the sets A and B .



(a) List the elements of set B .

Answer (a) [1]

(b) Complete the following statements.

(i) $2 \in$ [1]

(ii) $n(A) =$ [1]

(iii) $A \cap B = \{ \dots \}$ [1]

8 The n th term of a sequence is $2^n - 5$.

(a) Find the value of the first term.

Answer (a) [1]

(b) Find the difference between the third term and the fourth term.

Answer (b) [2]

9 (a) Factorise completely.

$$3x + 13x^2$$

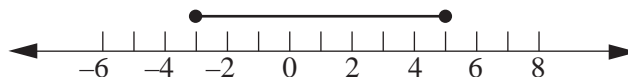
Answer (a) [1]

(b) Write as a single fraction.

$$\frac{4x}{5} + \frac{y}{3}$$

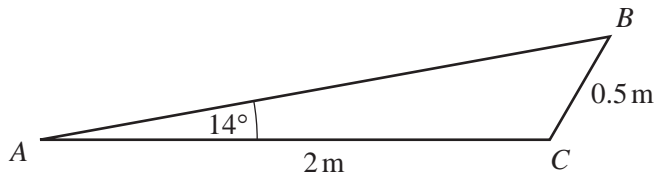
Answer (b) [2]

(c) Write down the inequality that describes the set of numbers shown below.



Answer (c) [2]

10



NOT TO
SCALE



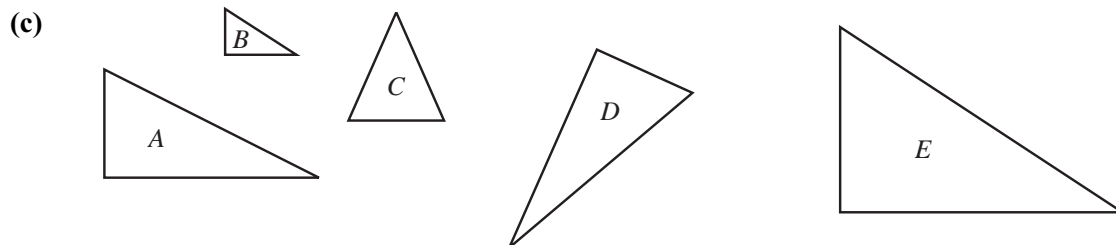
Triangle *ABC* is **similar** to triangle *PQR*.

- (a) Angle *BAC* = 14°. Write down the size of angle *QPR*.

Answer (a) Angle *QPR* = [1]

- (b) Find the length of *PR*.

Answer (b) [2]



Which two triangles are congruent?

Answer (c) and [1]

11 (a) Write down the gradient of the straight line $y = 5x - 1$.

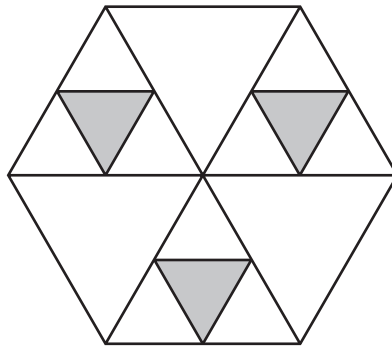
Answer (a) [1]

(b) Write down the equation of the line parallel to $y = 5x - 1$ which passes through the point (0, 3).

Answer (b) [2]

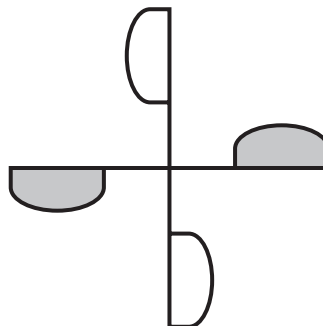
12 Carlos has two spinners.

(a) Write down the number of lines of symmetry of this spinner.



Answer (a) [1]

(b) Write down the order of rotational symmetry of this spinner.



Answer (b) [1]

BLANK PAGE

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.

University of 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.