



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 .

$$A = 2\pi r h$$

Curved surface area, A , of cone of radius r , sloping edge l .

$$A = \pi r l$$

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?

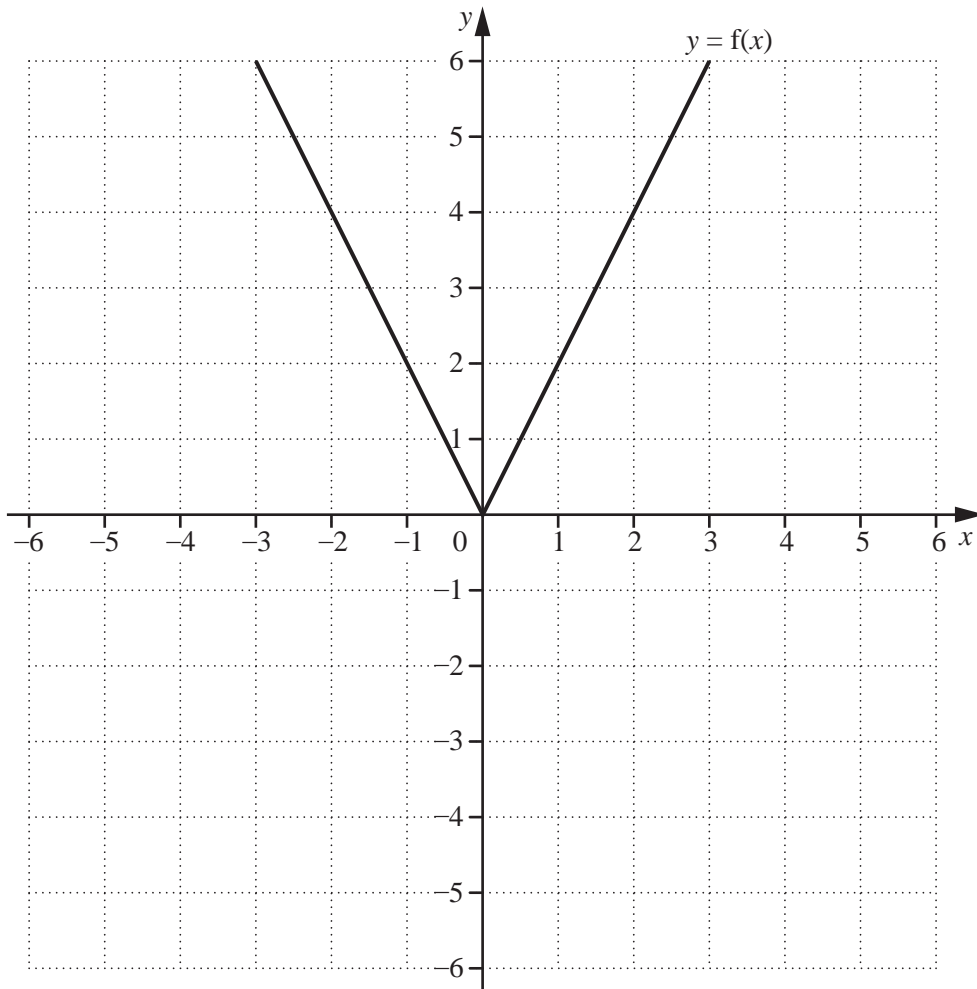
Answer (b)(i) h min [1]

- (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]

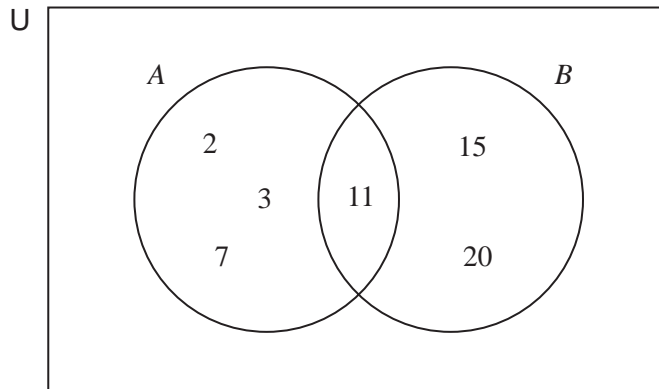
6

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

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.

$$3x + 13x^2$$

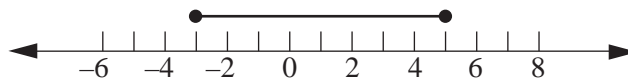
Answer (a) [1]

(b) Write as a single fraction.

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

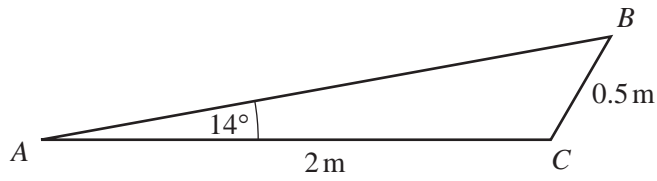
Answer (b) [2]

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

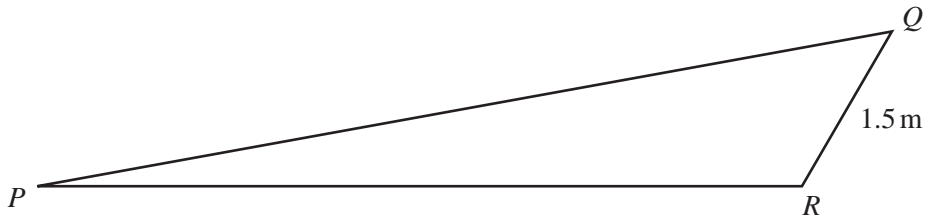


Answer (c) [2]

10



NOT TO SCALE



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

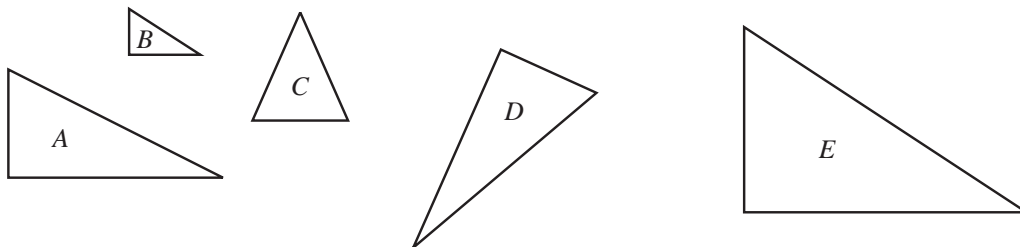
- (a) Angle BAC = 14°. Write down the size of angle QPR.

Answer (a) Angle QPR = [1]

- (b) Find the length of PR.

Answer (b) [2]

(c)



Which two triangles are congruent?

Answer (c) and [1]

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

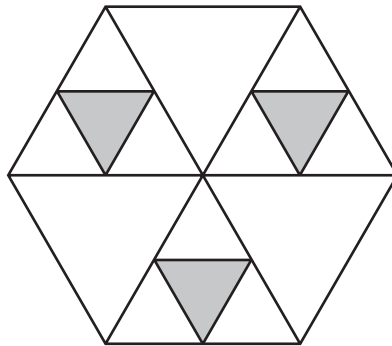
Answer (a) [1]

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

Answer (b) [2]

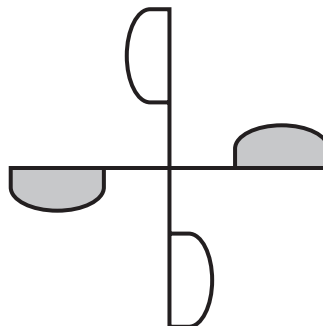
12 Carlos has two spinners.

(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]

