UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
International General Certificate of Secondary Education

CANDIDATE
NAME

CENTRE
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NUMBER

CAMBRIDGE INTERNATIONAL MATHEMATICS   **0607/12**

Paper 1 (Core)   **May/June 2013**

                                                          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.

This document consists of **12** printed pages.

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[Turn over

Formula List

Area, A, of triangle, base b, height h. $\qquad A = \dfrac{1}{2}bh$

Area, A, of circle, radius r. $\qquad A = \pi r^2$

Circumference, C, of circle, radius r. $\qquad C = 2\pi r$

Curved surface area, A, of cylinder of radius r, height h. $\qquad A = 2\pi rh$

Curved surface area, A, of cone of radius r, sloping edge l. $\qquad A = \pi rl$

Curved surface area, A, of sphere of radius r. $\qquad A = 4\pi r^2$

Volume, V, of prism, cross-sectional area A, length l. $\qquad V = Al$

Volume, V, of pyramid, base area A, height h. $\qquad V = \dfrac{1}{3}Ah$

Volume, V, of cylinder of radius r, height h. $\qquad V = \pi r^2 h$

Volume, V, of cone of radius r, height h. $\qquad V = \dfrac{1}{3}\pi r^2 h$

Volume, V, of sphere of radius r. $\qquad V = \dfrac{4}{3}\pi r^3$

1   Write 5392 correct to

(a)   the nearest 100 ,

Answer (a) .... [1]

(b)   the nearest 10 .

Answer (b) .... [1]

2   Here is a list of numbers.

4   5   11   20   27   39   43

Use the list to write down

(a)   a square number,

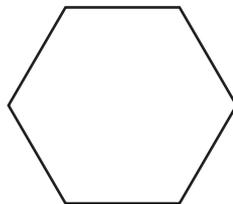Answer (a) .... [1]

(b)   a factor of 20,

Answer (b) .... [1]

(c)   a multiple of 5,

Answer (c) .... [1]

(d)   a prime number.

Answer (d) .... [1]

3

Write down the order of rotational symmetry of this regular hexagon.

Answer .... [1]

4 **(a)** Work out $6 - 2 \times 2$.

Answer (a) .... [1]

(b) Work out $\frac{1}{4}$ of 128 .

Answer (b) .... [1]

(c) Find the value of 2^{-3} .

Answer (c) .... [1]

5 Write down in order of size, starting with the smallest.

$$\frac{1}{3} \qquad \frac{1}{5} \qquad 0.3 \qquad 25\%$$

Answer .... < .... < .... < .... [2]

6 **(a)**
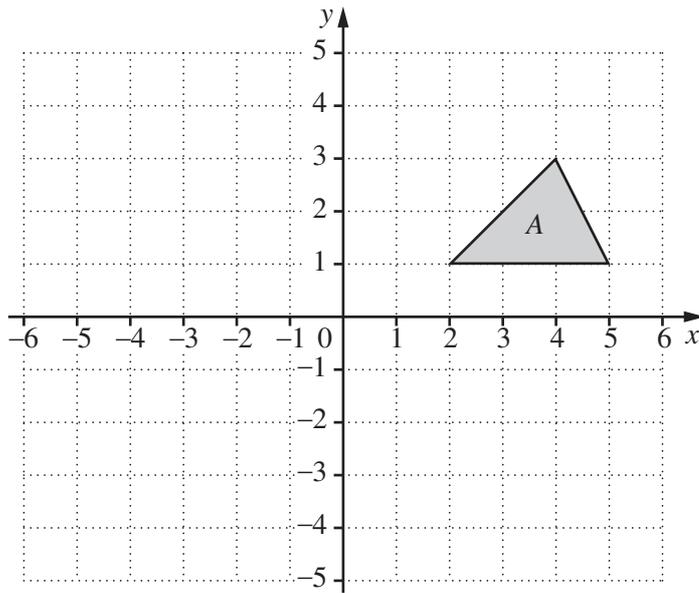
Reflect triangle *A* in the *y*-axis. [1]

(b)
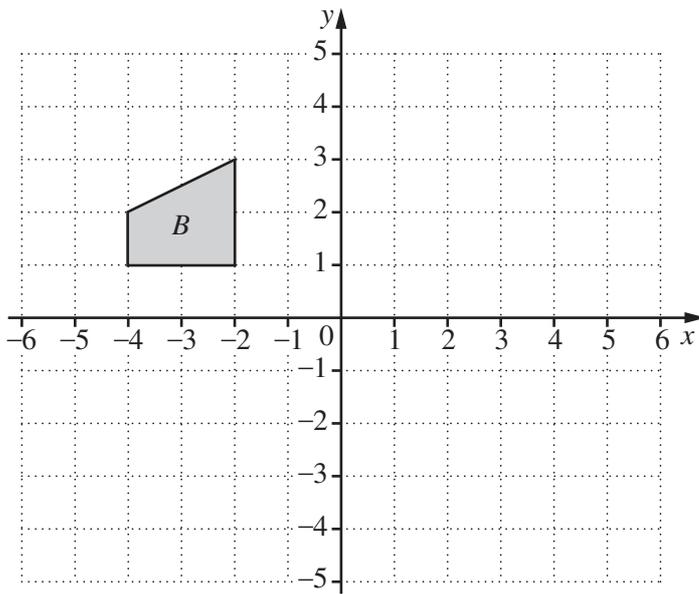
Rotate shape *B* through 90° clockwise about the origin. [2]

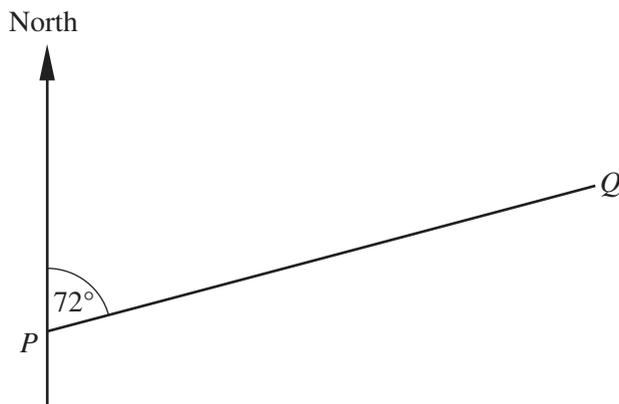7 **(a)** The line *AB* is drawn below.

Mark a point *C* so that angle *ABC* = 124° .

_____

A   *B*   [1]

(b)

North

72°

P

Q

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SCALE

The bearing of *Q* from *P* is 072° .

Find the bearing of *P* from *Q*.

Answer (b) .... [2]

8 Elaine, Mark and Timi each spin the same spinner a number of times.

They record how many times it lands on the number 4.

	Number of spins	Number of times the spinner lands on 4
Elaine	10	2
Mark	100	26
Timi	200	49

Who will give the best estimate of the probability that the spinner lands on the number 4?

Explain your answer.

.... because ....

.... [2]

9   **(a)**   The cost, in $, of hiring a machine is worked out using the formula

$$\text{cost} \;=\; 50 \;+\; 25 \times \text{number of days hired.}$$

Work out the cost of hiring the machine for

(i)   2 days,

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

(ii)   1 week.

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

(b)   Simplify.

$$5x + 4y + 2x - y$$

Answer (b) .... [2]

(c)   Solve the following equation.

$$3x + 5 = 23$$

Answer (c) x = ... [2]

(d)   Solve the following inequality.

$$4x - 3 \leqslant 7$$

Answer (d) .... [2]

(e) Solve the simultaneous equations.

$$3x + y = 19$$

$$x + y = -5$$

Answer (e) $x =$ ....

$y =$ .... [2]
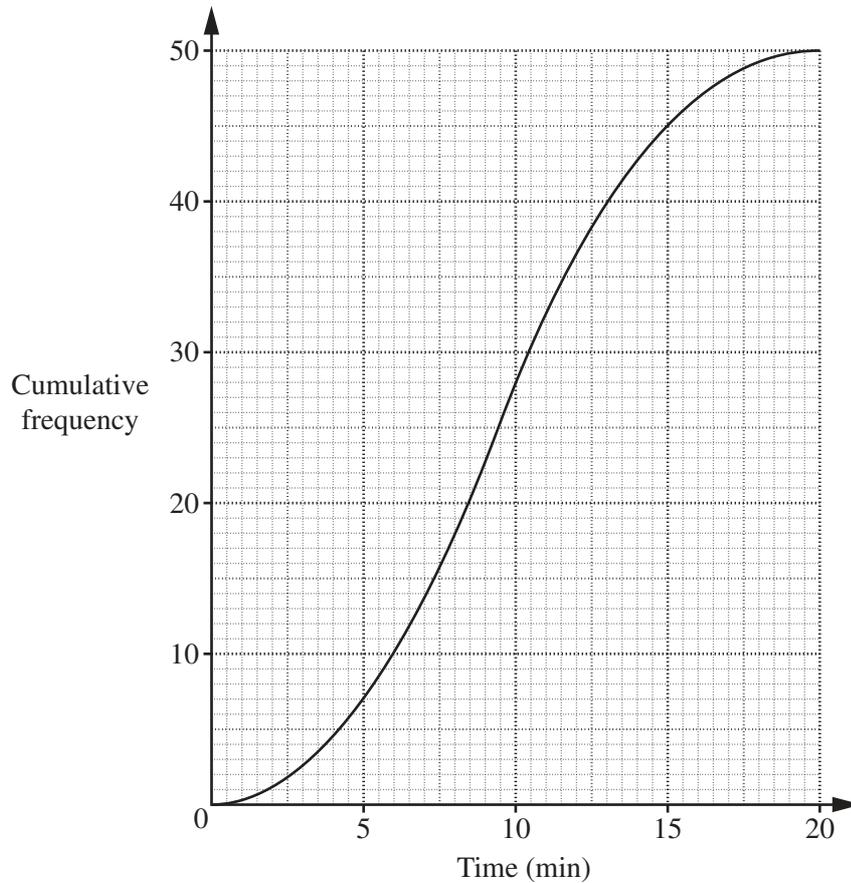
10

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2 cm

3 cm
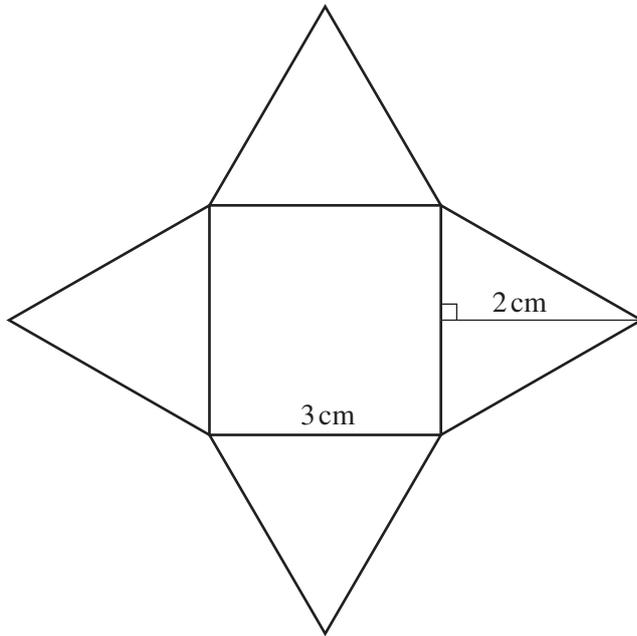
A badge is in the shape of a square with four congruent triangles attached.
The square has side 3 cm.
The triangles each have a perpendicular height of 2 cm.

Work out the area of the badge.

Answer .... cm^2 [3]

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11 The cumulative frequency curve shows the time, in minutes, spent by 50 customers at a supermarket checkout.

(a) Use the graph to find

(i) the median time,

Answer (a)(i) _____ min [1]

(ii) the interquartile range.

Answer (a)(ii) _____ min [2]

(b) How many customers spent less than 10 minutes at the checkout?

Answer (b) _____ [1]

Question 12 is printed on the next page.

12 Triangles *ABE* and *ACD* are similar.
   AE = 4 cm, *EB* = 6 cm and *DC* = 9 cm.

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A

4 cm

E   6 cm   *B*

D   9 cm   *C*
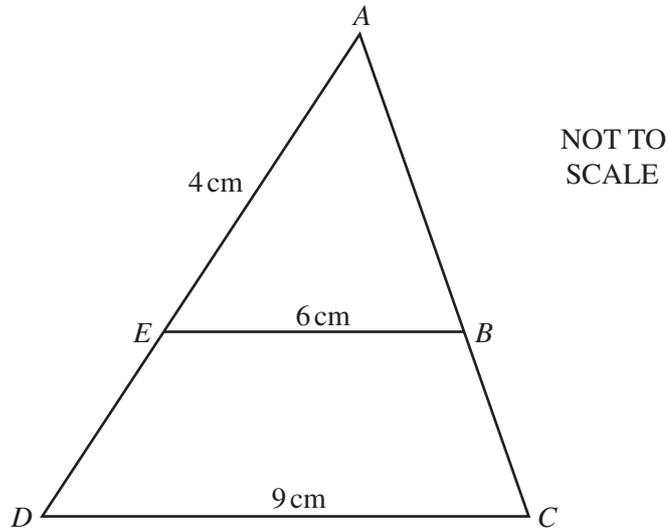
Work out the length of *ED*.

Answer .... cm   [3]

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