UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
International General Certificate of Secondary Education

CANDIDATE NAME

CENTRE NUMBER | | | | | |

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CAMBRIDGE INTERNATIONAL MATHEMATICS **0607/02**

Paper 2 (Extended) **For Examination from 2010**

SPECIMEN PAPER

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.

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 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 of the marks for this paper is 40.

For Examiner's Use

This document consists of **7** printed pages and **1** blank page.

Formula List

For the equation $ax^2 + bx + c = 0$ $\quad x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

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

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

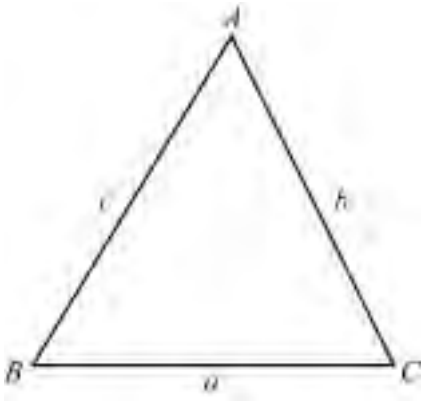
Curved surface area, A, of sphere of radius r. $\quad A = 4\pi r^2$

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

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

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

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



$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$

$$a^2 = b^2 + c^2 - 2bc\cos A$$

$$\text{Area} = \frac{1}{2}bc\sin A$$

Answer **all** the questions.

1 Write down the value of

(a) 7^{-2},

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

(b) $64^{\frac{1}{3}}$.

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

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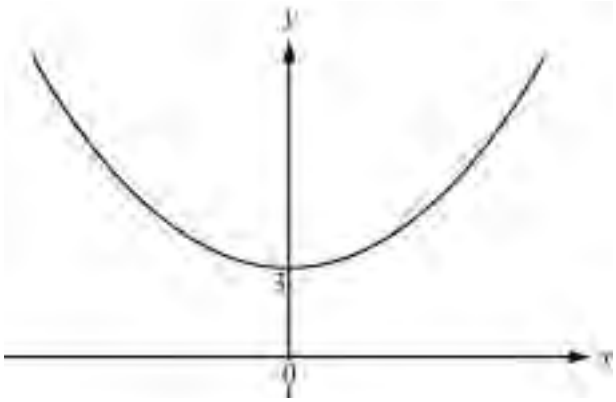
2 The graphs shown are translations of the graph of $y = x^2$.

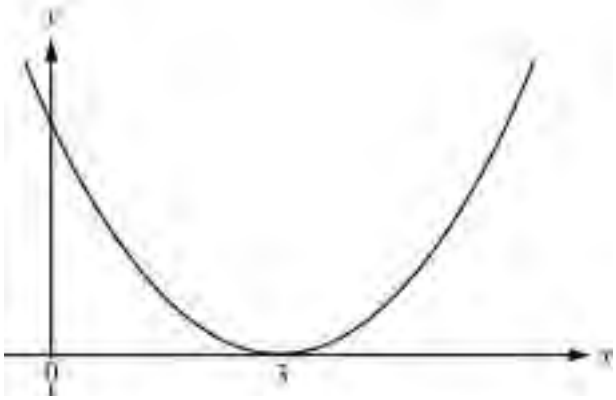
Write down their equations.

(a)



Answer(a) $y =$ ..... [1]

(b)



Answer(b) $y =$ ..... [1]

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3 Solve $2 \sin x° = 1$ for $0 \leqslant x \leqslant 360$.

Answer $x =$ ..... or $x =$ ..... [2]

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4 Solve the simultaneous equations.

$$3x + 2y = 7$$
$$5x + 3y = 12$$

Answer $x =$ .....

$y =$ ..... [4]

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5 Solve the equation $2x^2 + 11 = x + 21$.

Answer $x =$ ..... or $x =$ ..... [4]

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6 **(a)** Write down the value of $\log_2 8$.

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

(b) Simplify as far as possible $\log 12 + \log 3 - 2 \log 6$.

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

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7 Simplify

(a) $\sqrt{12}$,

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

(b) $\sqrt{12} + \sqrt{48}$,

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

(c) $\dfrac{\sqrt{48}}{\sqrt{12}}$.

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

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8 For the set of data

1 2 4 5 6 8 9 9 10 12

find

(a) the mean,

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

(b) the mode,

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

(c) the median,

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

(d) the lower quartile.

Answer(d) ..... [1]

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9 For the sequence 2, 7, 14, 23, 34, 47, ...

(a) find the next two terms,

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

(b) find a formula for the *n*th term.

Answer(b) *n*th term = ... [4]

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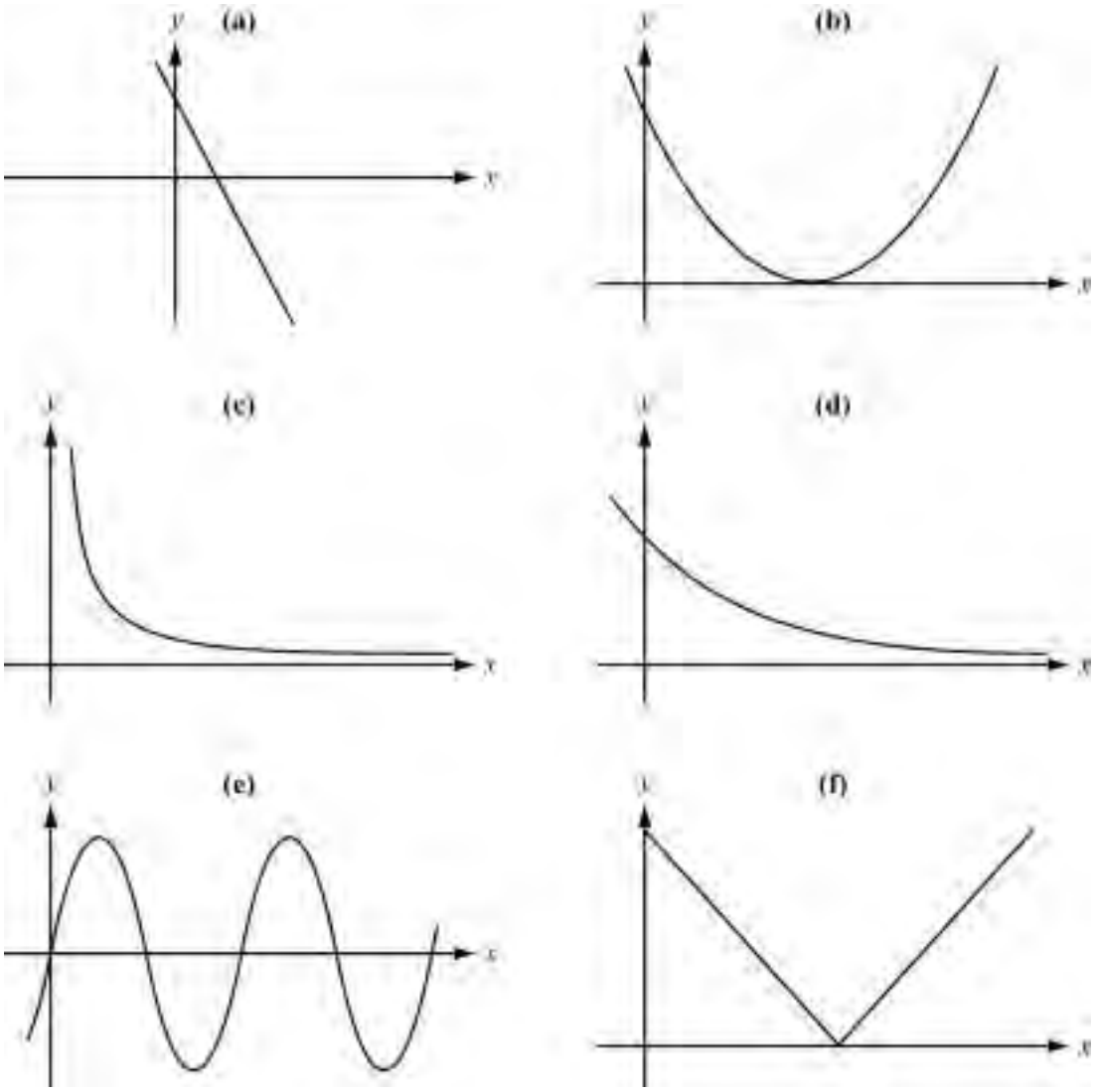
10 The graphs (**a**) to (**f**) below show some of the following functions (A to H).

A	$f(x) = 4 - 2x$	E	$f(x) = 2^{-x}$
B	$f(x) = 2^x$	F	$f(x) = \frac{4}{x}$
C	$f(x) = x^2 - 4x + 4$	G	$f(x) = \lvert x - 3 \rvert$
D	$f(x) = \cos x$	H	$f(x) = \sin 2x$

Match each graph with its correct function.



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

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

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

Answer(d) ..... [1]

Answer(e) ..... [1]

Answer(f) ..... [1]

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