UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
International General Certificate of Secondary Education

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER			

CAMBRIDGE INTERNATIONAL MATHEMATICS **0607/13**

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 0.2×0.4 .

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

(b) Write these in order, smallest first.

0.85 89% 0.9 0.745

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

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2 Work out 15% of \$160 .

Answer \$ ..... [2]

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3 **(a)** Write 0.007582 correct to 3 significant figures.

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

(b) Write $\frac{9}{20}$ as a decimal.

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

[Turn over

For Examiner's Use

4 Work out.

$$2\frac{3}{4} + 3\frac{2}{3}$$

Answer ..... [3]

---

5 **(a)** Find the value of 7^0.

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

(b) Simplify.

$$7x^2 \times 3x^5$$

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

For Examiner's Use

6 **(a)** Factorise.

$3a - a^2$

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

(b) Expand and simplify.

$(x - 5)(x + 1)$

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

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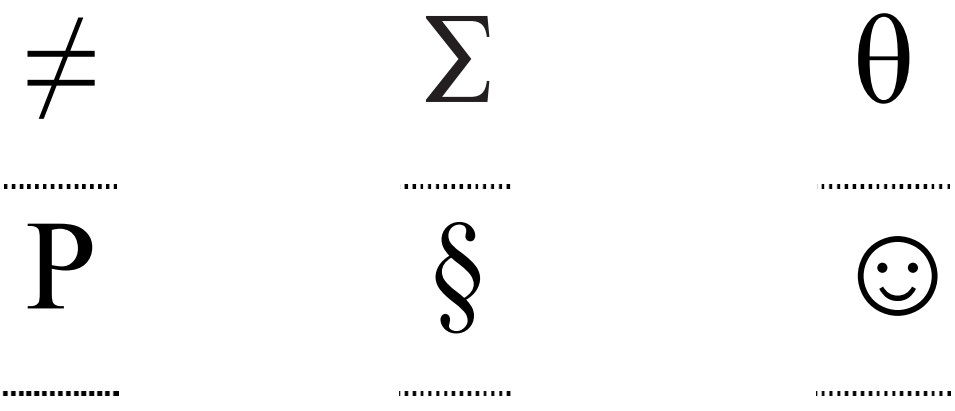
7 Under each shape write the correct letter from the table.

L	Line symmetry **only**
R	Rotational symmetry **only**
B	**Both** line and rotational symmetry
N	**No** symmetry



....

.... [3]

For Examiner's Use

8 $f(x) = 3x + 2$

(a) Find $f(5)$.

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

(b) Find x when $f(x) = 14$.

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

---

9 A class of 21 students took a mathematics test.
Here are their results.

29	34	18	28	43	49	8
29	45	32	28	17	46	32
26	17	42	39	21	38	47

Draw an ordered stem-and-leaf diagram to show these results.

0	.....
1	.....
2	.....
3	.....
4	.....

Key: ..... | ..... means ..... [3]

For Examiner's Use

10 **(a)** Solve.

$5x - 2 < 3x + 5$

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

(b) Simplify.

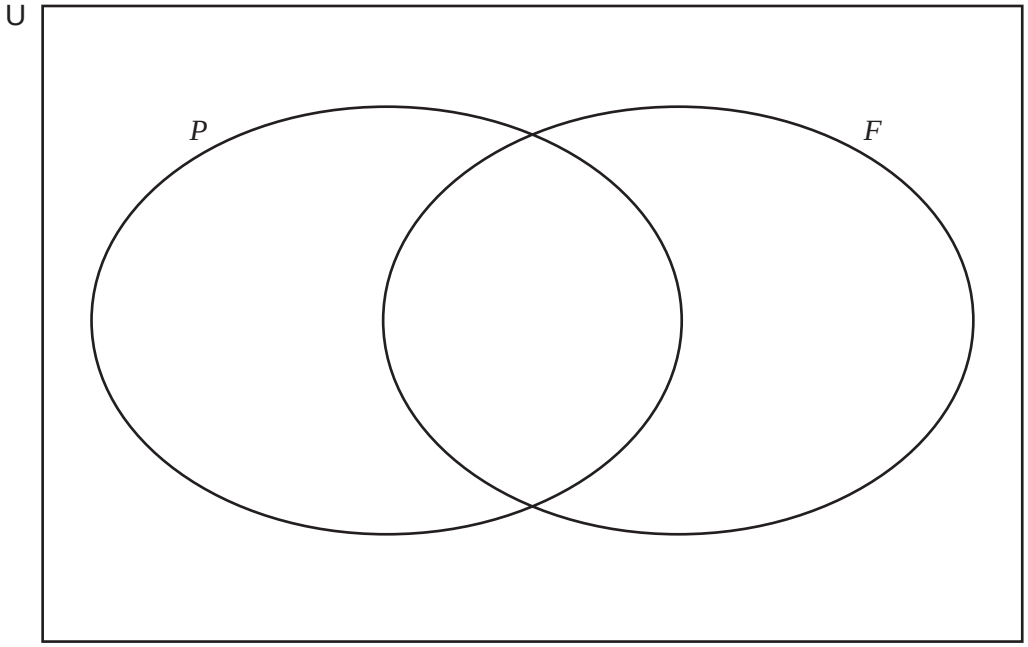
$$\frac{7}{xy} \div \frac{3x}{2y}$$

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

For Examiner's Use

11 U = {2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15}
P = {prime numbers}
F = {factors of 6}

(a) Complete the Venn diagram to show this information.



[3]

(b) A number is chosen at random from the 14 elements in U.

Write down the probability that this number is an element of

(i) $(P \cap F)$,

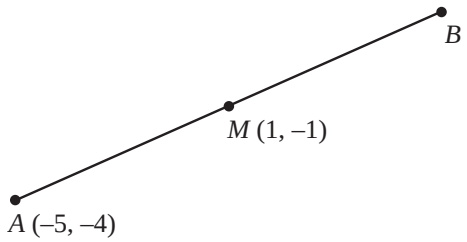
Answer (b)(i) ..... [1]

(ii) $(P \cup F)'$.

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

For Examiner's Use

12



NOT TO SCALE

The diagram shows three points $A(-5, -4)$, $M(1, -1)$ and B.
M is the midpoint of the line AB.

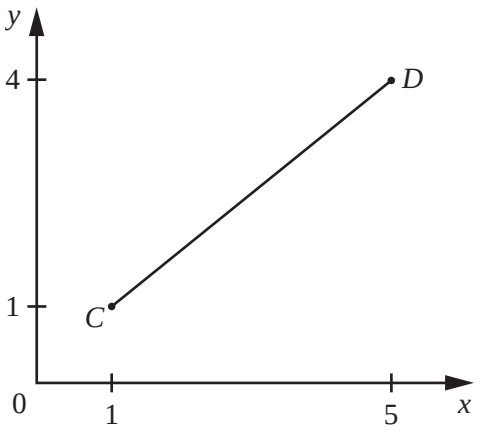
(a) Find the co-ordinates of B.

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

(b) Find the gradient of the line AB.

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

(c)



NOT TO SCALE

Find the length of the line CD.

Answer (c) ..... [3]

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