UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
International General Certificate of Secondary Education

CANDIDATE NAME

CENTRE NUMBER | | | | | |

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CAMBRIDGE INTERNATIONAL MATHEMATICS **0607/11**

Paper 1 (Core) **May/June 2011**

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 **8** printed pages.

UNIVERSITY of CAMBRIDGE International Examinations

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 6.149 correct to 1 decimal place.

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

(b) Write 206 correct to 2 significant figures.

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

(c) Write 0.0023 in standard form.

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

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2 **(a)** List all four factors of 15.

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

(b) Find the highest common factor of 15 and 21.

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

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3 **(a)** Write down the number of lines of symmetry of a regular pentagon.

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

(b) A quadrilateral has rotational symmetry of **order** 2 and **no** lines of symmetry.

Write down the mathematical name of this quadrilateral.

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

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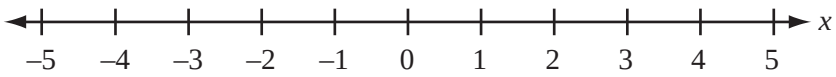
4 **(a)** Solve the equation $2(3x - 5) = x + 10$.

Answer(a) $x =$ ..... [3]

(b) $-3 \leqslant x < 4$

Show this inequality on the number line below.



[2]

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5 The nth term of a sequence is $2n - 3$.

(a) Write down the first term and the second term of this sequence.

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

(b) Write down the 100th term of this sequence.

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

(c) Paulo says that the number 44 is in the sequence.

Is he correct?
You **must** show your working.

[2]

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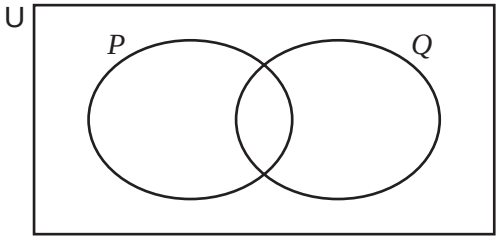
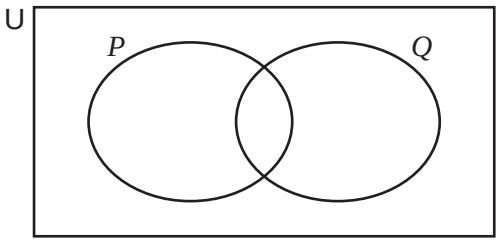
6 Shade the required regions in the Venn diagrams below.

(a)



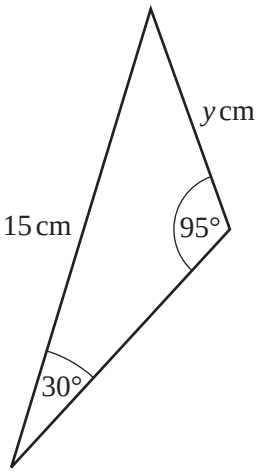
P ∪ Q [1]

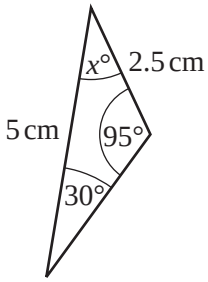
(b)



P′ ∩ Q [1]

7





NOT TO SCALE

The diagram shows two triangles.

(a) Write down the value of x.

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

(b) Complete the following statement.

The two triangles are ..... [1]

(c) Find the value of y.

Answer(c) $y =$ ..... [2]

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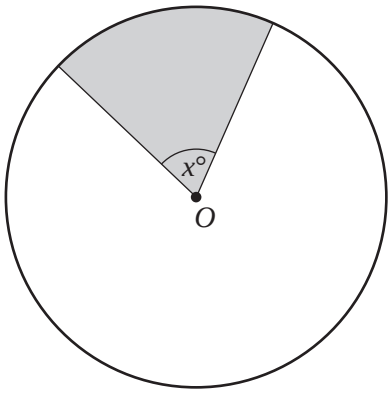
8 **(a)** Find the gradient of the line $2y = x + 3$.

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

(b) Write down the gradient of a line parallel to the line $2y = x + 3$.

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

9



NOT TO
SCALE

The area of the circle, centre O, is 100 cm^2.
The area of the shaded sector is 20 cm^2.

Find the value of x.

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

---

10 **(a)** Work out $\sqrt[3]{27}$.

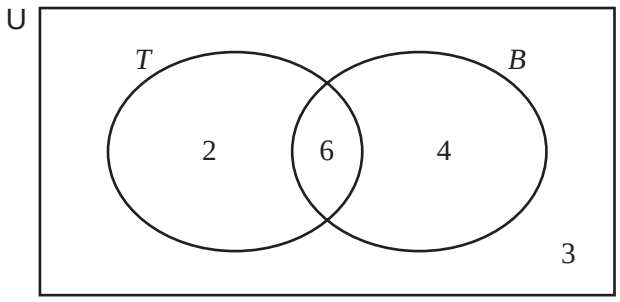
Answer(a) ..... [1]

(b) Factorise completely.

$3y^2 - 15y$

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

11



The Venn diagram shows the number of students who play tennis (T), basketball (B), both tennis and basketball or neither of these games.

(a) How many students play basketball only?

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

(b) How many students do not play tennis?

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

(c) Find the probability that a student chosen at random plays tennis.

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

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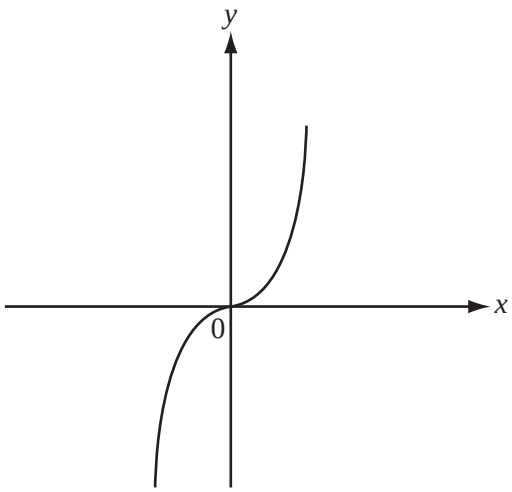
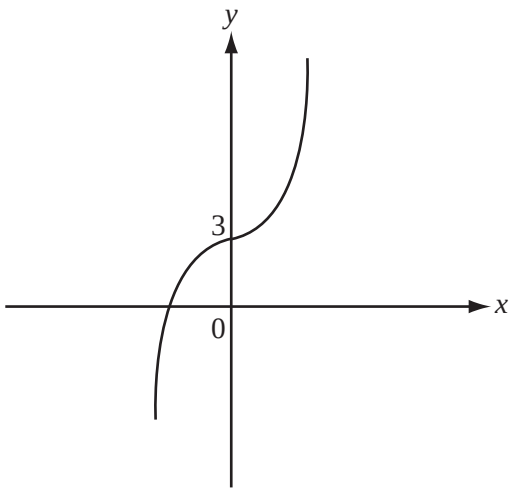
12 **(a)** Graph **B** is a transformation of graph **A**. The equation of graph **A** is $y = x^3$.

Write down the equation of graph **B**.



A

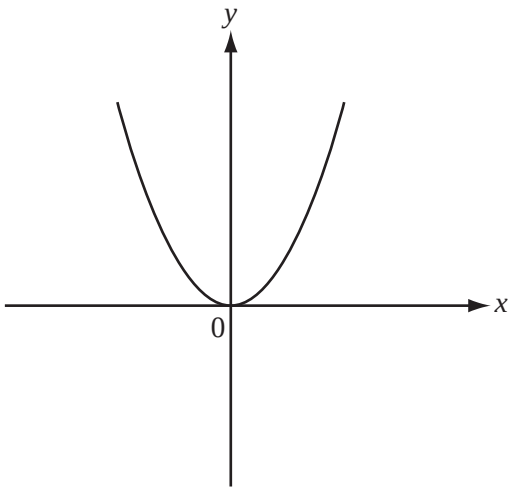


B

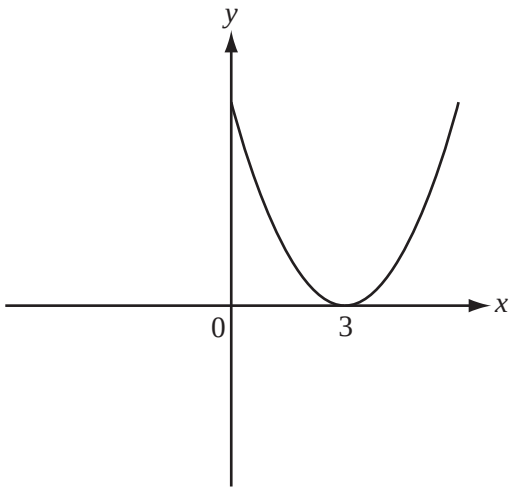
Answer(a) ..... [2]

(b) Graph **D** is a transformation of graph **C**. The equation of graph **C** is $y = x^2$.

Write down the equation of graph **D**.



C



D

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