	UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATION	NS Strapaper
CANDIDATE	International General Certificate of Secondary Education	1392
CENTRE NUMBER	CANDIDATE	
CAMBRIDGE I	NTERNATIONAL MATHEMATICS	0607/21
Paper 2 (Extend	ded)	May/June 2012 45 minutes
Candidates ans	wer on the Question Paper	
Additional Mate	rials: 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.



Formula List

For the equation $ax^2 + bx + c = 0$	$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$
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 edg	e l. $A = \pi r l$
Curved surface area, A , of sphere of radius r .	$A = 4\pi r^2$
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 .	$V = \frac{4}{3}\pi r^3$



 $\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$ $a^2 = b^2 + c^2 - 2bc \cos A$ $\operatorname{Area} = \frac{1}{2}bc \sin A$

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		5						
)	(a) Find the two possible values of $ x + y $	when $x^2 = 4$ and $y = 1$.	Por iner					
			oridge					
		Answer(a) ,	[2]					
	(b) Expand and simplify $(\sqrt{2}+1)(3\sqrt{2}-1)(3\sqrt{2})$	-1).						
			[2]					
		Answer(b)	[2] 					
7	Sara records some information about the number of cars in a car park.							
	$U = \{ cars in the car park \}$	\bigcup F S	ן ך					
	$F = \{5\text{-door cars}\}$							
	$S = {$ silver cars $}$							
	You may use the Venn diagram to help you	u answer the following questions.						
	You may use the Venn diagram to help you (a) $n(U) = 12$, $n(F) = 7$, $n(F \cap S) = 2$	u answer the following questions. , $n(F \cup S) = 11$.						
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8	Factorise completely.	For Carty For
	(a) $x^2 + 2x - 48$	(bride
		200
	(b)	Answer(a) [2]
	(b) $xy + 2xz - 3y - 6z$	
		Answer(b) [2]
9	$y \propto \frac{1}{\sqrt{x}}$	
	When $x = 4, y = 3$.	
	Find y when $x = 25$.	
		Answer [3]

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The first five terms of	a sequence ar	e					aCan
	-2,	1,	6,	13,	22.		brid
(a) Write down the ne	ext term in the	e sequend	ce.				°
			Answer(a	ı)			[1]
(b) Find an expression	n, in terms of	n, for the	e <i>n</i> th term o	f the seque	nce.		
			Answer(b	»)			[3]
Two mathematically si The larger container, w	imilar contain when full, can	ers have hold 320	heights of 3) ml of wate	cm and 6 r.	cm.		
Calculate how much w	ater the small	ler contai	iner can hole	d when full	l.		
	The first five terms of (a) Write down the ne (b) Find an expression Two mathematically single the larger container, we Calculate how much we	The first five terms of a sequence ar -2, (a) Write down the next term in the (b) Find an expression, in terms of Two mathematically similar contain The larger container, when full, can Calculate how much water the small	The first five terms of a sequence are -2 , 1, (a) Write down the next term in the sequence (b) Find an expression, in terms of <i>n</i> , for the find an expression, in terms of <i>n</i> , for the Two mathematically similar containers have The larger container, when full, can hold 320 Calculate how much water the smaller container	7 The first five terms of a sequence are -2, 1, 6, (a) Write down the next term in the sequence. Answer(a) (b) Find an expression, in terms of n, for the nth term of Answer(b) Two mathematically similar containers have heights of 3 The larger container, when full, can hold 320 ml of wate Calculate how much water the smaller container can hold	The first five terms of a sequence are -2, 1, 6, 13, (a) Write down the next term in the sequence. (b) Find an expression, in terms of <i>n</i> , for the <i>n</i> th term of the sequence. (b) Find an expression, in terms of <i>n</i> , for the <i>n</i> th term of the sequence. (b) Find an expression, in terms of <i>n</i> , for the <i>n</i> th term of the sequence. (b) Find an expression, in terms of <i>n</i> , for the <i>n</i> th term of the sequence. (b) Find an expression, in terms of <i>n</i> , for the <i>n</i> th term of the sequence. Answer(b)	The first five terms of a sequence are -2, 1, 6, 13, 22. (a) Write down the next term in the sequence. <i>Answer(a)</i>	7 The first five terms of a sequence are -2, 1, 6, 13, 22. (a) Write down the next term in the sequence. <i>Answer(a)</i> (b) Find an expression, in terms of <i>n</i> , for the <i>n</i> th term of the sequence. (b) Find an expression, in terms of <i>n</i> , for the <i>n</i> th term of the sequence. The sequence of the sequence. Two mathematically similar containers have heights of 3 cm and 6 cm. The larger container, when full, can hold 320 ml of water. Calculate how much water the smaller container can hold when full.

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12 (a) (i) $3^p = 81$ Write down the value of <i>p</i> .	8	For iner's
(ii) $2^q = \frac{1}{8}$ Write down the value of q.	Answer(a)(i)	
(b) $\log y = 2\log 3 + 5\log 2$ Find the value of y.	Answer(a)(ii)	[1]
	Answer(b)	[3]

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