

CAMBRIDGE INTERNATIONAL EXAMINATIONS

Cambridge International General Certificate of Secondary Education

MARK SCHEME for the October/November 2015 series

0607 CAMBRIDGE INTERNATIONAL MATHEMATICS

0607/61

Paper 6 (Extended), maximum raw mark 40

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began, which would have considered the acceptability of alternative answers.

Mark schemes should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

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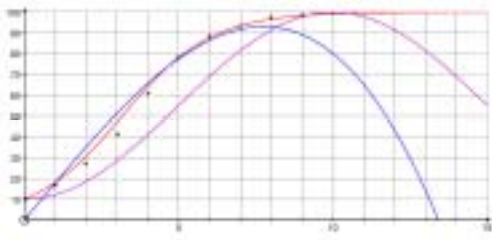
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Abbreviations

cao	correct answer only
dep	dependent
FT	follow through after error
isw	ignore subsequent working
oe	or equivalent
SC	Special Case
nfww	not from wrong working
soi	seen or implied

A INVESTIGATION		SUMS OF TWO SQUARES													
Question	Answer	Mark	Part Marks												
1 (a)	13 17	1													
(b)	$13 = 2^2 + 3^2$ $17 = 1^2 + 4^2$	1													
(c)	[101 =] $1^2 + 10^2$	1													
2 (a)	$49 + 576 = 625$ oe	2	B1 for two correct squares												
(b)	<table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td></td> <td></td> <td>41</td> </tr> <tr> <td></td> <td></td> <td>61</td> </tr> <tr> <td></td> <td>84</td> <td>85</td> </tr> <tr> <td>15</td> <td>112</td> <td></td> </tr> </table>			41			61		84	85	15	112		3	B1 for each column In third column FT <i>their</i> 84 either by pattern (+1) or by Pythagoras (correct to at least 1 dp)
		41													
		61													
	84	85													
15	112														
(c)	equal sum oe	1	C opportunity												
(d) (i)	29, 420	1	C opportunity												
(ii)	5100, 5101	1	C opportunity												
3 (a)	Each bracket correctly squared $4xy = 4mn$	1 1													
(b)	$13^2 + 4^2 = 11^2 + 8^2$ $8^2 + 1^2 = 4^2 + 7^2$ $13^2 + 1^2 = 11^2 + 7^2$	4	B2 for one correct statement B1 for each further correct statement If 0 scored then B1 for one solution												
(c)	[$9^2 +$] 13^2 [= $5^2 +$] 15^2	2	M1 for $x = 7, y = 2$ soi C opportunity												
Communication seen in one of 2(c) , 2(d)(i) , 2(d)(ii) or 3(c)		1													

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B MODELLING		POPULATION GROWTH	
Question	Answer	Mark	Part Marks
1 (a)	Any correct statement implying why it is correct to do so	1	
(b)	Any correct statement about size or change of rate	1	
2 (a) (i)	$a + b = 18$ oe	1	
(ii)	$125a + 5b = 78$ oe	1	
(b)	$y = -0.1x^3 + 18.1x$	2FT	B1FT for $[a =] - 0.1$ B1FT for $[b =] 18.1$ If 0 scored B1FT for two inaccurate answers C opportunity
3 (a) (i)	$a + b = 10$ oe	1	
(ii)	$a - b = 100$ oe	1	
(b)	$y = 55 - 45 \cos(18x)^\circ$	2FT	B1FT for $[a =] 55$ B1FT for $[b =] - 45$ C opportunity
4 (a)	$[k =] 9$ nfw	2	M1 for $\frac{100}{1+k} = 10$
(b)	Accurate oe dependent on k	1FT	FT their k
5 (a)		4FT	B1FT for each correct shape B1FT for all 3 y-intercepts correct C opportunity
(b)	Accurate oe Levels out after 10 years oe	2	B1 for each
Communication seen in one of 2(b), 3(b) or 5(a)		1	