

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

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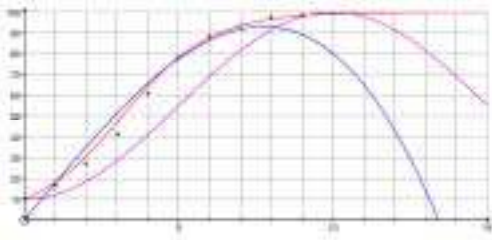
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Abbreviations

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"><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	B2 for one correct statement B1 for each further correct statement If 0 scored then B1 for one solution M1 for $x = 7, y = 2$ soi C opportunity												
	(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													
		(c)	$[9^2 +] 13^2 [= 5^2 +] 15^2$		2											
		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	B1FT for $[a =] -0.1$ B1FT for $[b =] 18.1$ If 0 scored B1FT for two inaccurate answers C opportunity
	(ii) $125a + 5b = 78$ oe	1	
	(b) $y = -0.1x^3 + 18.1x$	2FT	
3 (a)	(i) $a + b = 10$ oe	1	B1FT for $[a =] 55$ B1FT for $[b =] -45$ C opportunity
	(ii) $a - b = 100$ oe	1	
	(b) $y = 55 - 45 \cos(18x)^\circ$	2FT	
4 (a)	$[k =] 9$ nfwv	2	M1 for $\frac{100}{1+k} = 10$ FT <i>their</i> k
	(b) Accurate oe dependent on k	1FT	
5 (a)		4FT	B1FT for each correct shape B1FT for all 3 y-intercepts correct C opportunity B1 for each
	(b) Accurate oe Levels out after 10 years oe	2	
Communication seen in one of 2(b) , 3(b) or 5(a)		1	