

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.

Cambridge will not enter into discussions about these mark schemes.

Cambridge is publishing the mark schemes for the October/November 2015 series for most Cambridge IGCSE[®], Cambridge International A and AS Level components and some Cambridge O Level components.

© IGCSE is the registered trademark of Cambridge International Examinations.

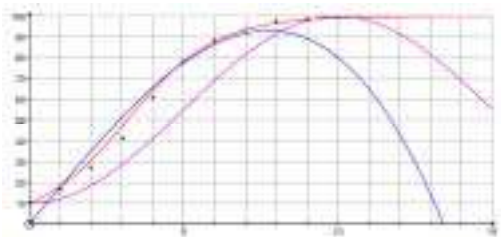
| | | | |
|---------------|--|-----------------|--------------|
| Page 2 | Mark Scheme | Syllabus | Paper |
| | Cambridge IGCSE – October/November 2015 | 0607 | 61 |

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="display: inline-table; vertical-align: middle;"> <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 | | | | | | | | | | | | | |

| | | | |
|--------|---|----------|-------|
| Page 3 | Mark Scheme | Syllabus | Paper |
| | Cambridge IGCSE – October/November 2015 | 0607 | 61 |

| 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 | |