

**MARK SCHEME for the May/June 2010 question paper**  
**for the guidance of teachers**

**0607 CAMBRIDGE INTERNATIONAL MATHEMATICS**

**0607/06**

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 must be read in conjunction with the question papers and the report on the examination.

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**M** marks are given for a correct method.

**A** marks are given for an accurate answer following a correct method.

**B** marks are given for a correct statement or step.

**D** marks are given for a clear and appropriately accurate drawing.

**P** marks are given for accurate plotting of points.

**E** marks are given for correctly explaining or establishing a given result.

**C** marks are given for clear communication.

### **Abbreviations**

cao correct answer only

cso correct solution only

ft follow through

oe or equivalent

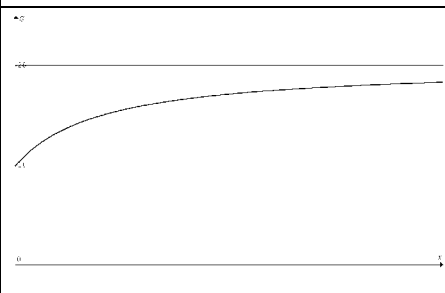
soi seen or implied

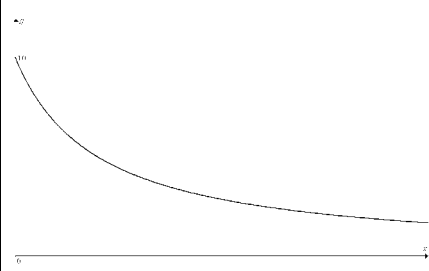
ww without working

www without wrong working



|               |                                       |                 |              |
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| <b>Question</b>          | <b>Answer</b>                                                                        | <b>Mark</b> | <b>Notes</b>                                                                             | <b>Comments</b>                                                                                                                      |
|--------------------------|--------------------------------------------------------------------------------------|-------------|------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| <b>B</b><br><b>1 (a)</b> | 20                                                                                   | 1           | B1                                                                                       |                                                                                                                                      |
| <b>(b)</b>               | $\frac{20}{1\frac{1}{2}}$ oe                                                         | 1           | R1                                                                                       | Averaging speeds possible                                                                                                            |
| <b>2</b>                 | $\frac{10+5}{1\frac{1}{4}}$ oe                                                       | 2           | R1 $15 \div 1.25$ with time in any form<br>R1 for 15 and $1\frac{1}{4}$ shown in working | Accept $12 \times 1.25 = 15$                                                                                                         |
| <b>3</b>                 | 11.6 to 11.7(km/h)                                                                   | 2           | M1 $\frac{10+4}{1\frac{1}{5}}$ oe                                                        | Ignore extra methods<br>Communication mark possible but not for model<br>or $\frac{840}{72}$                                         |
| <b>4 (a)</b>             | $\frac{10+20 \times \frac{x}{60}}{1+\frac{x}{60}}$ oe for numerator                  | 2           | B1 for numerator or denominator seen                                                     |                                                                                                                                      |
| <b>(b)</b>               | Evidence of either multiplying top and bottom by 60 or common denominators of 60 oe. | 1           | R1                                                                                       |                                                                                                                                      |
| <b>5</b>                 | 11.7 to 11.8(km/h)                                                                   | 1           | B1                                                                                       | Communication mark (can be evidence of substitution)                                                                                 |
| <b>6</b>                 |   | 2           | G1 correct shape<br>G1 start at (0, 10)                                                  |                                                                                                                                      |
| <b>7</b>                 | 26 or better                                                                         | 2           | M1 Sketch showing intersection of graphs<br>M1<br>$600 + 20x = 13(60 + x)$               | Communication mark for complete correct method shown or described.<br><br>Reverse substitution statement does not gain communication |

|          |            |                                                                                   |   |                                                                                         |                                                      |
|----------|------------|-----------------------------------------------------------------------------------|---|-----------------------------------------------------------------------------------------|------------------------------------------------------|
| <b>8</b> | <b>(a)</b> | $(S =) \frac{600 + yx}{60 + x}$ oe                                                | 1 | B1                                                                                      | Communication mark                                   |
|          | <b>(b)</b> | 3                                                                                 | 2 | M1 $\frac{600 + 24y}{60 + 24} = 8$<br>soi<br>A1ft for at least same level of difficulty |                                                      |
|          | <b>(c)</b> |  | 2 | G1 decreasing from a point on the y-axis<br><br>G1 x-axis asymptote                     |                                                      |
|          |            |                                                                                   | 1 | C1                                                                                      | Communication seen in two of questions 3, 5, 7, 8(b) |