**MATHEMATICS** **1112/02**

Paper 2

MARK SCHEME

Maximum Mark: 40

**IMPORTANT NOTICE**

Mark Schemes have been issued on the basis of **one** copy per Assistant examiner and two copies per Team Leader.
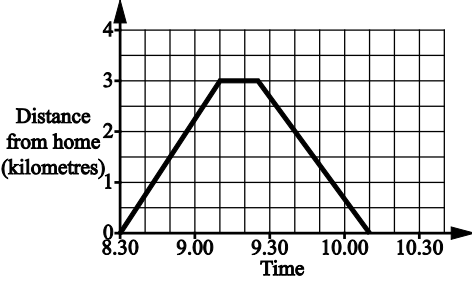
This document consists of **11** printed pages.

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**[Turn over**

**Mark scheme annotations and abbreviations**
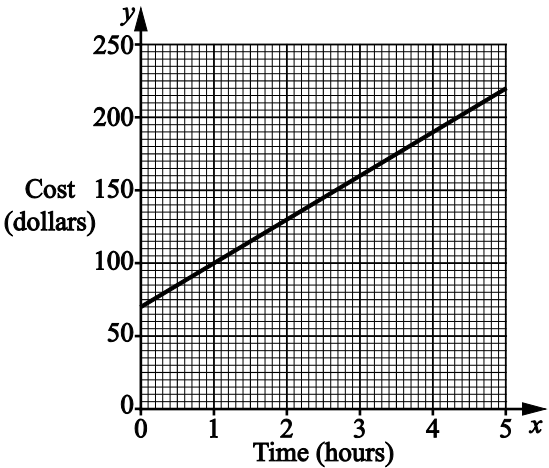
| | |
|---|---|
| **M1** | method mark |
| **A1** | accuracy mark |
| **B1** | independent mark |
| **FT** | follow through after error |
| dep | dependent |
| oe | or equivalent |
| cao | correct answer only |
| isw | ignore subsequent working |
| soi | seen or implied |

| Question | Answer | Marks | Further Information |
|---|---|---|---|
| **1** | Two negative numbers that multiply to make 18 <br> e.g. <br> −3 (×) −6 <br> −9 (×) −2 | **1** | Accept correct decimals or fractions. |
| **2** | 0.4 <br> $\dfrac{5}{8}$ <br> 28 (%) | **2** | Allow equivalents e.g. <br> $\dfrac{4}{10}$, 40% <br> 0.625, 62.5% <br> 0.28, $\dfrac{28}{100}$, $\dfrac{7}{25}$ |
| | one correct answer. | B1 | |
| **3(a)** | Point plotted at (5, 11) | **1** | Allow tolerance of half a square. |
| **3(b)** | 4 (years) | **1** | |
| **3(c)** | A description of the relationship in words <br> e.g. <br> • Older cars have less value / newer cars are worth more <br> • As the age of a car increases, its value goes down | **1** | |

| Question | Answer | Marks | Further Information |
|---|---|---|---|
| **4(a)** | ($) 800 (per month) | **1** | |
| **4(b)** | Ticks Oliver's house<br><br>**and**<br><br>shows supportive working, e.g.<br>• sight of 850 ($ per month)<br>• sight of (800 × 12 =) 9600<br>• sight of (850 × 15 =) 12750 | **1** | Follow through from answer to part **(a)** |
| **5** |  | **2** | |
| | A trapezium-shaped travel graph that shows a journey leaving home at 8.30 and arriving home at a time between 10.05 and 10.15<br><br>**or**<br><br>for a completely correct horizontal section | M1 | |

| Question | Answer | Marks | Further Information |
|---|---|---|---|
| **6** | 12.8 cm | **2** | |
| | Evidence of a method of dividing by 7 and multiplying by 4.<br>e.g.<br>• $\frac{4}{7} \times 22.4$<br>• $22.4 \div 7 \times 4$ | M1 | |
| **7** | Accurate construction of a kite with the two additional vertices lying within tolerance (± 2mm) with correct arcs. | **2** | |
| | **either**<br>one additional vertex constructed accurately (sides of kite may not be drawn in)<br>**or**<br>accurate kite drawn but no evidence of four correct construction arcs. | M1 | within tolerance (± 2mm) |
| **8** | 38 (crates) | **2** | |
| | 1865 ÷ 48 or 39 or 38.85… or 38.9 seen | B1 | |

| Question | Answer | Marks | Further Information |
|---|---|---|---|
| **9(a)** | $\frac{1}{3}$    $\frac{3}{4}$    $\frac{4}{3}$    ⊘$\frac{4}{7}$ | 1 | Accept any unambiguous indication of the correct answer. |
| **9(b)** | 10 | 1 | |
| **10** | 70 (%) | 2 | |
| | Sight of $\frac{175}{250}$ (oe) or $175 \div 250$ | M1 | |
| **11** | $6n$ **or** $2 \times 3n$<br><br>$3n + 2$ **or** $2 + 3n$<br>e.g. $5 + (n - 1) \times 3$ oe | 2 | |
| | one correct answer. | B1 | |
| **12** | $\frac{5}{11}$ | 1 | |
| **13** | 6 or more triangles on the grid sharing at least one edge with another triangle, creating a tessellation. | 1 | |

| Question | Answer | Marks | Further Information |
|---|---|---|---|
| **14** | 875 (grams) | **2** | |
| | Evidence of a correct conversion between kilograms and grams.<br><br>This could be implied by sight of any of these values:<br>1600 (grams)<br>0.325 (kg)<br>400 (grams)<br>1200 (grams)<br>725 (grams) | M1 | Do not accept just 1 kg = 1000 g for the conversion. |
| **15** | 125 (kilometres) | **1** | |
| **16(a)** | 4.5 (cm) | **1** | |
| **16(b)** | 35 (°) | **1** | |
| **17** | 45 (g)   0.08 (kg)   0.14 (kg)   1200 (g) | **1** | |
| **18** | 3.5 oe | **1** | |
| **19** | 15<br>5 | **1** | |

| Question | Answer | Marks | Further Information |
|---|---|---|---|
| **20(a)** | $y = 30x + 70$ | 1 | |
| **20(b)** |  | 1 | A straight line from (0, 70) to (5, 220)<br>FT from *their* **(a)** provided both boxes contain a number greater than 0. |
| **20(c)** | $1.5 \pm 0.1$ | 1 | FT from *their* line in **(b)**, as long as there is an appropriate point on the line, i.e. not from a step graph. |
| **21** | $600\,(\text{cm}^2)$ | 2 | |
| | $6 \times$ their side length squared<br>**or**<br>$10^2$ or 100 seen | M1 | |

| Question | Answer | Marks | Further Information |
|---|---|---|---|
| **22** | (multiply by) 5 | **1** | |
| **23** | The children got higher scores (on the second test). | **1** | Allow a statement implying that the second test had a higher score e.g. "the second test was easier", "the children improved" etc.<br><br>Do not accept:<br>a statement about one test only, e.g. the mode for the second test was 6.<br>reference to the number of students changing |
| **24** | 53(.3) (million hectares) | **2** | |
| | **either**<br>0.22 × 3860 or 849.2 or 849<br>**or**<br>0.21 × 3790 or 795.9 or 796 | M1 | |

| Question | Answer | Marks | Further Information |
|---|---|---|---|
| **25** |  | **2** | Award 2 marks for *C* in correct position within template. <br><br> Accept ± 2° in the drawing of the angles. |
|  | one correct bearing drawn implied by the position of a point. | B1 |  |
| **26(a)** | 3.73229… (cm) | **1** |  |
| **26(b)** | 3.7 (cm) | **1** | Allow 4 or 3.73 (cm) <br><br> Do not allow 3.732 <br><br> Accept follow through from (a). Do not award a mark if no rounding takes place. |
| **27** | ($)125 (.00) | **1** |  |

| Question | Answer | Marks | Further Information |
|---|---|---|---|

| 28 | 91 | 2 | |
|---|---|---|---|
| | **either**<br><br>0.18 × 200 implied by 36<br><br>**or**<br><br>0.22 × 250 implied by 55 | M1 | |
| 29 | 82 (cm²) | 2 | |
| | Correct method of one area, e.g.<br>• 0.5 × 12 × 3 implied by 18<br>• 8 × 4 implied by 32<br>• 8 × 8 implied by 64, provided this is not doubled later. | M1 | |

        