**GCSE Mathematics (1MA1)**

**Themed papers – Buying and Selling**

**Compiled from student-friendly mark schemes**

**Please note that this mark scheme is not the one used by examiners for making scripts. It is intended more as a guide to good practice, indicating where marks are given for correct answers. As such, it doesn’t show follow-through marks (marks that are awarded despite errors being made) or special cases.**

**It should also be noted that for many questions, there may be alternative methods of finding correct solutions that are not shown here – they will be covered in the formal mark scheme.**

**NOTES ON MARKING PRINCIPLES**

|  |
| --- |
| **Guidance on the use of codes within this mark scheme** |
| M1 – method mark. This mark is generally given for an appropriate method in the context of the question. This mark is given for showing your working and may be awarded even if working is incorrect.  P1 – process mark. This mark is generally given for setting up an appropriate process to find a solution in the context of the question.  A1 – accuracy mark. This mark is generally given for a correct answer following correct working.  B1 – working mark. This mark is usually given when working and the answer cannot easily be separated.  C1 – communication mark. This mark is given for explaining your answer or giving a conclusion in context supported by your working.  Some questions require all working to be shown; in such questions, no marks will be given for an answer with no working (even if it is a correct answer). |

**Question 1 (Total 4 marks)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Part** | **Working or answer an examiner might expect to see** | **Mark** | **Notes** |
|  | 20 pens costs £2.38 ´ 10 = £23.80 | P1 | This mark is given for finding the cost of 20 pens |
| 20 folders cost £5.60 ´ 4 = £22.40 | P1 | This mark is given for finding the cost of 20 folders |
| The total cost = £23.80 + £22.40 = £46.20 | P1 | This mark is given for finding the total cost of 20 pens and 20 folders |
| Yes, Ben has enough money | C1 | This mark is given for the correct conclusion supported by correct working |

**Question 2 (Total 4 marks)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Part** | **Working or answer an examiner might expect to see** | **Mark** | **Notes** |
|  | 45 ´ 1.20 = 54  34 ´ 1.50 = 51 | P1 | This mark is given for a process to work out the money made selling books and candles |
| 150 – 54 – 51 = 45 | P1 | This mark is given for a process to work out the money made from selling calendars |
| 45 ¸ 0.9 | P1 | This mark is given for a process to find out the number of calendars sold |
| 50 | A1 | This mark is given for the correct answer only |

**Question 3 (Total 5 marks)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Part** | **Working or answer an examiner might expect to see** | **Mark** | **Notes** |
|  | 30 ÷ 6 = 5  30 ÷ 15 = 2  30 ÷ 10 = 3 | P1 | This mark is given for finding the number of sets of pens, pencils and rulers are to be bought |
| 5 × 82 = 410p  2 × 45 = 90p  3 × 1.25 = £3.75  30 × 37 = 1110p | P1 | This mark is given for a process to find cost of 30 pens **or** 30 pencils **or** 30 rulers |
| P1 | This mark is given for at for a process to find cost of 30 pens, 30 pencils and 30 rulers |
| £4.10 + £0.90 + £3.75 + £11.10 | P1 | This mark is given for a process to find out the total cost |
| £19.85 | A1 | This mark is given for the correct answer only |

**Question 4 (Total 5 marks)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Part** | **Working or answer an examiner might expect to see** | **Mark** | **Notes** |
| (a) | (5 ´ 20) – (13 ´ 7.50) | P1 | This mark is given for a process to find the cost of the bicycle lights |
| 100 – 97.50 | P1 | This mark is given for a process to find the amount of change Dylan should get |
| 2.50 | A1 | This mark is given for the correct answer only |
| (b) | ´ 120 = 24 | M1 | This mark is given for a method to find the amount of the price of the bicycle |
| 120 – 24 = 96 | A1 | This mark is given for the correct answer only |

**Question 5 (Total 3 marks)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Part** | **Working an or answer examiner might expect to see** | **Mark** | **Notes** |
|  | 45 ÷ 2.85 (= 15.789…) | P1 | This mark is given for a start to a process to find the solution |
|  | 15 ´ 2.85 = 42.75  45 – 42.75 = | P1 | This mark is given for a complete process to find the amount of change Ben should get |
|  | 2.25 | A1 | This mark is given for the correct answer only |

**Question 6 (Total 4 marks)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Part** | **Working or answer an examiner might expect to see** | **Mark** | **Notes** |
| (a) | 700 pen sets to buy at 90p each | P1 | This mark is given for a process to estimate |
| 700 ´ 90p = | P1 | This mark is given for a process to estimate the total cost |
| £630 (or 63000p) | A1 | This mark is given for the correct answer only |
| (b) | An overestimate, since all the figures have been rounded up | C1 | This communication mark is given for a correct statement with reasons |

**Question 7 (Total 4 marks)**

| **Part** | **Working or answer an examiner might expect to see** | **Mark** | **Notes** |
| --- | --- | --- | --- |
|  | 14200 ´ 1.2 = 17040 | P1 | This mark is given for a process to find the cost of the boat with VAT included |
| 17040 – 5000 = 12040 | P1 | This mark is given for a process to find the amount to be paid after the deposit |
| 12040 ¸ 10 | P1 | This mark is given for a process to find the amount of one payment |
| 1204 | A1 | This mark is given for the correct answer only |

**Question 8 (Total 4 marks)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Part** | **Working or answer an examiner might expect to see** | **Mark** | **Notes** |
|  | 10 – 4.61 (= 5.39) | P1 | This mark is given for process to find total cost (5.39 or 539) |
| 5.39 – 0.65 (= 4.74) | P1 | This mark is given for process to find cost of the coffees |
| 4.74 ¸ 0.79 | P1 | This mark is given for complete process to find the number of friends |
| 6 | A1 | This mark is given for the correct answer only |

**Question 9 (Total 5 marks)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Part** | **Working or answer an examiner might expect to see** | **Mark** | **Notes** |
| (a) | Both values given are overestimates, so the actual cost will be less than £240 | 1 | This mark is given for a correct explanation |
| (b) | 35 ´ 5.80 = 203 | 1 | This mark is given for a process to find the cost of 35 shirts before the discount is applied |
| 203 ´ 10% = 20.30 | 1 | This mark is given for a process to find 10% of the cost |
| 203 – 20.30 | 1 | This mark is given for a complete process to find actual cost of 35 T-shirts |
| 182.70 | 1 | This mark is given for the correct answer only |

**Question 10 (Total 3 marks)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Part** | **Working or answer an examiner might expect to see** | **Mark** | **Notes** |
|  | 158 220 – 146 500 = 11 720 | M1 | This mark is given for a method to find the amount of profit made |
|  | ´ 100 | M1 | This mark is given for a method to find the percentage profit made |
|  | 8 | A1 | This mark is given for the correct answer only |

**Question11 (Total 2 marks)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Part** | **Working or answer an examiner might expect to see** | **Mark** | **Notes** |
|  | 12*p* or18*b* or *p* + *b* | M1 | This mark is given for at least one correct term seen |
| 12*p* + 18*b* | A1 | This mark is given for the correct answer only |

**Question 12 (Total 5 marks)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Part** | **Working or answer an examiner might expect to see** | **Mark** | **Notes** |
|  | 8500 × 1.2 = 10200  or  8500 + (8500 ´ 0.2) = 10200 | P1 | This mark is given for a process to find total cost of the van |
|  | 12 × 531.25 = 6375 | P1 | This mark is given for a process to find total cost of the 12 payments |
| 10200 – 6375 = 3825 | P1 | This mark is given for a complete process to find the value of the deposit |
| 3825 : 6375 | P1 | This mark is given for a process to find a correct unsimplified ratio |
| (Dividing both sides by 1275)  3 : 5 | A1 | This mark is given for the correct answer only |

**Question 13 (Total 3 marks)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Part** | **Working or answer an examiner might expect to see** | **Mark** | **Notes** |
|  | 5.64 ¸ 12 = 0.47 | 1 | This mark is given for finding the cost of one bottle |
| 50 – 47 = 3 | 1 | This mark is given for finding the profit on the sale of one bottle |
| ´ 100 = 6.4 (to one decimal place) | 1 | This mark is given for the correct answer only |

**Question 14 (Total 2 marks)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Part** | **Working or answer an examiner might expect to see** | **Mark** | **Notes** |
|  | (2.80 × 100) ÷ (100 − 30)  or  2.80 ÷ 0.7 | 1 | This mark is given for a process to find the normal price of the book |
| 4 | 1 | This mark is given for the correct answer only |

**Performance data:**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Q** | **Taken from** | | | **Total Marks available** | **TOPIC** | **Spec Ref** | **AO** | **% Mean marks** | **Edexcel mean averages Marks of candidates who achieved grade:** | | | | | | |
| **Q** | **Series** | **Paper** | **ALL** | **5** | **4** | **3** | **2** | **1** | **U** |
| **1** | 8 | Nov-18 | 3F | 4 | Ratio | R10, R11, N13 | 3 | **93** | 3.71 | 3.93 | 3.88 | 3.78 | 3.48 | 2.38 | 0.74 |
| **2** | 13 | Nov-18 | 3F | 4 | Number | R10, N13 | 3 | **89** | 3.56 | 3.95 | 3.83 | 3.64 | 3.15 | 2.13 | 0.67 |
| **3** | 8 | Jun-18 | 2F | 5 | Number | N4, N13 | 3 | **88** | 4.38 | 4.88 | 4.8 | 4.65 | 4.28 | 3.16 | 1.18 |
| **4a** | 11a | Nov-19 | 3F | 3 | Number | N13 | 3 | **94** | 2.83 | 2.95 | 2.93 | 2.86 | 2.67 | 2.2 | 0.86 |
| **4b** | 11b | Nov-19 | 3F | 2 | Number | N12 | 1 | **82** | 1.64 | 1.93 | 1.87 | 1.71 | 1.21 | 0.56 | 0.2 |
| **5** | 4 | Mock Set 1 | 3F | 3 | − | − | − | **−** | − | − | − | − | − | − | − |
| **6a** | 12a | Mock Set 2 | 1F | 3 | − | − | − | **−** | − | − | − | − | − | − | − |
| **6b** | 12b | Mock Set 2 | 1F | 1 | − | − | − | **−** | − | − | − | − | − | − | − |
| **7** | 7 | Mock Set 2 | 2F | 4 | − | − | − | **−** | − | − | − | − | − | − | − |
| **8** | 18 | Nov-18 | 3F | 4 | Number | R9, N13 | 3 | **74** | 2.97 | 3.84 | 3.57 | 3.12 | 1.91 | 0.67 | 0.23 |
| **9a** | 16a | Nov-17 | 1F | 1 | Number | N14 | 3 | **51** | 0.51 | 0.7 | 0.62 | 0.52 | 0.41 | 0.26 | 0.21 |
| **9b** | 16b | Nov-17 | 1F | 4 | Ratio | N2, R9 | 3 | **50** | 2.01 | 3.24 | 2.69 | 2.05 | 1.33 | 0.89 | 0.58 |
| **10** | 21 | Nov-19 | 3F | 3 | Ratio | R9 | 1 | **50** | 1.5 | 2.46 | 1.95 | 1.46 | 1.01 | 0.54 | 0.14 |
| **11** | 2 | Jun-17 | 3F | 2 | Algebra | A21 | 2 | **48** | 0.96 | 1.47 | 1.25 | 1 | 0.7 | 0.37 | 0.1 |
| **12** | 23 | Jun-18 | 2F | 5 | Ratio | N13, R4, R5, R9 | 3 | **37** | 1.83 | 3.53 | 2.83 | 1.91 | 0.93 | 0.34 | 0.1 |
| **13** | 17 | Nov-17 | 2F | 3 | Ratio | R9, N13 | 3 | **35** | 1.04 | 1.57 | 1.17 | 1.03 | 0.93 | 0.7 | 0.32 |
| **14** | 30 | Nov-17 | 1F | 2 | Ratio | R9 | 1 | **6** | 0.12 | 0.67 | 0.23 | 0.08 | 0.03 | 0.03 | 0.01 |
|  |  |  |  | **53** |  |  |  |  | **27.06** | **35.12** | **31.62** | **27.81** | **22.04** | **14.23** | **5.34** |