**GCSE Mathematics (1MA1)**

**Themed papers – Food**

**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**

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| **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 3 marks)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Part** | **Working or answer an examiner might expect to see** | **Mark** | **Notes** |
|  | 3 × 450 = 1350g | P1 | This mark is given for a process to find the weight of the small boxes |
|  | P1 | This mark is given for a process to find the number of large boxes |
| 6 | A1 | This mark is given for the correct answer only |

**Question 2 (Total 2 marks)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Part** | **Working or answer an examiner might expect to see** | **Mark** | **Notes** |
|  | SP, SR, SB, FP, FR, FB MP, MR, MB | B2 | These two marks are given for all 9 combinations given with no extras or repeats(one mark is given for at least 6 correct combinations given) |

**Question 3 (Total 2 marks)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Part** | **Working or answer an examiner might expect to see** | **Mark** | **Notes** |
|  | 20 – 7 = 13 | M1 | This mark is given for a method to find out how many sweets Harry now has |
|  | A1 | This mark is given for the correct answer only |

**Question 4 (Total 3 marks)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Part** | **Working or answer an examiner might expect to see** | **Mark** | **Notes** |
|  | 2 × 2.75 = 5.50 | P1 | This mark is given for a process to find the cost of two cups of coffee |
| 5.50 + 2.90 = 8.40 | P1 | This mark is given for a process to find the total cost of the two cups of coffee and the piece of cake  |
| 10 – 8.40 = 1.60Yes, Dave receives more than £1.60 in change | C1 | This mark is given for a correct conclusion following correct working |

**Question 5 (Total 3 marks)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Part** | **Working or answer an examiner might expect to see** | **Mark** | **Notes** |
|  | £10 – 30p − £1.60 – (2 × £1.50) = £5.10 | P1 | This mark is given for a process to find money spent on 3 packets of sausages |
| £5.10 ÷ 3 | P1 | This mark is given for a process to find the cost of one packet of sausages |
| Fahama is wrong, a packet of sausages costs £1.70 | C1 | This mark is given for a correct conclusion with supporting working |

**Question 6 (Total 2 marks)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Part** | **Working or answer an examiner might expect to see** | **Mark** | **Notes** |
|  | 1 kg =  = 18 | M1 | This mark is given for finding the cost of 1 kg of meat |
|  | 2 × 18 = 36 | A1 | This mark is given for the correct answer only |

**Question 7 (Total 3 marks)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Part** | **Working an or answer examiner might expect to see** | **Mark** | **Notes** |
|  | Peas: 24 ×  = 144°Carrots: 16 ×  = 96°Peas: 20 ×  = 120° | M1 | This mark is given for a method to find the angles to be drawn for each of the sectors in the pie chart |
| C1 | This mark is given for all three angles calculated correctly |
| peasmushroomscarrots | C1 | This mark is given for a fully correct pie chart properly labelled |

**Question 8 (Total 3 marks)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Part** | **Working or answer an examiner might expect to see** | **Mark** | **Notes** |
|  | 2 ×  =  | P1 | This mark is given for a process to find out how many tins of cat food are needed each day |
| 8 ÷  = 16 | P1 | This mark is given for a process to find out how many days 8 tins will last |
| 16 > 14 Yes, Sue has bought enough cat food to last for 14 days | C1 | This mark is given for a conclusion supported by working |

**Question 9 (Total 4 marks)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Part** | **Working or answer an examiner might expect to see** | **Mark** | **Notes** |
|  |  × 84 = 50.4 | P1 | This mark is given for a process to find the number of calories in 60g of banana |
|  × 87 = 130.5 |  | This mark is given for a process to find the number of calories in 150g of yogurt |
| 50.4 + 130.5 | P1 | This mark is given for a complete process to find the number of calories in the breakfast |
| 180.9 | A1 | 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** |
|  | Burger: 360 ÷ 36 × 11 = 110°Pie: 360 ÷ 36 × 17 = 170°Hot dog: 360 ÷ 36 × 8 = 80° | M1 | This mark is given for method to find at least one angle |
| A1 | This mark is given for at least one accurately drawn angle (from 3 sectors) or all 3 angles correctly calculated |
|  | A1burgerpiehot dog | This mark is given for a fully correct and labelled pie chart. |

**Question 11 (Total 2 marks)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Part** | **Working or answer an examiner might expect to see** | **Mark** | **Notes** |
|  | 3.60 ÷ 2.5 = 1.44 | 1 | This mark is given for finding the cost of 1 kg of apples |
| 3.4 × 1.44 = 5.04 | 1 | This mark is given for the correct answer only |

**Question 12 (Total 4 marks)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Part** | **Working or answer an examiner might expect to see** | **Mark** | **Notes** |
|  | 1750 ÷ 5 = 350  | M1 | This mark is given for a method to find the weight of 1 tin of soup |
| 1490 – (4 × 350) = 90 | M1 | This mark is given for a method to find the weight of 3 packets of soup |
| 90 ÷ 3 = 30(3 × 350) + (30 × 2) | M1 | This mark is given for a method to find the weight of 3 tins of soup and 2 packets of soup |
| 1110 (grams) | A1 | This mark is given for the correct answer only |

**Question 13 (Total 4 marks)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Part** | **Working or answer an examiner might expect to see** | **Mark** | **Notes** |
|  |  = 20 | P1 | This mark is given for a process to find out the number of bags of sweets sold |
| 20 × 0.65 = 13 | P1 | This mark is given for a process to find the amount of money made from selling the bags of sweets |
|  × 100 | P1 | This mark is given for a process to find percentage profit from selling the sweets |
| 30 | A1 | This mark is given for the correct answer only |

**Question 14 (Total 5 marks)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Part** | **Working or answer an examiner might expect to see** | **Mark** | **Notes** |
|  | 420 ×  = 120 | P1 | This mark is given for a process to find the number of vanilla cakes |
| 420 ×  = 147 | P1 | This mark is given for a process to find the number of banana cakes |
| 420 – 120 – 147 = 153 | P1 | This mark is given for a full process to find the total number of lemon cakes and chocolate cakes |
| (153 ÷ 9) = 1717 × 4 = | P1 | This mark is given for a process to find the number of lemon cakes |
| 68 | A1 | This mark is given for the correct answer only |

**Question 15 (Total 2 marks)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Part** | **Working or answer an examiner might expect to see** | **Mark** | **Notes** |
|  |  :  or 25 : 75 | M1 | This mark is given for finding a correct but unsimplified ratio |
| 1 : 3 | A1 | This mark is given for the correct answer in the form 1 : *n* |

**Question 16 (Total 5 marks)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Part** | **Working or answer an examiner might expect to see** | **Mark** | **Notes** |
|  |  × 400 = 112 | P1 | This mark is given for a process to find the number of medium packets of mints that Alan buys |
|  × 500 = 300 | P1 | This mark is given for a process to find the number of medium packets of mints that Beryl buys |
|  = 50 | P1 | This mark is given for a process to use ratio to find the number of medium packets of mints that Charlie buys |
| 50 × 4 = 200 | P1 | This mark is given for a process to find the number of medium packets of mints that Charlie buys |
| 112 + 300 + 200 = 612 | A1 | This mark is given for the correct answer only |

**Question 17 (Total 2 marks)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Part** | **Working or answer an examiner might expect to see** | **Mark** | **Notes** |
|  | Number of eggs in two boxes = 2 × 6 = 12Total number of eggs = number of eggs in 20 boxes = 20 × 6 = 120Ratio is thus 12 : 120 | M1 | This mark is given for a methods to find the number of eggs in two boxes and the total number of eggs in 20 boxes |
| 1:10 | A1 | This mark is given for the correct answer only |

**Question 18 (Total 6 marks)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Part** | **Working an or answer examiner might expect to see** | **Mark** | **Notes** |
| (a) | 4 × 125 = 500 or 2× 120 = 340 or 3 × 135 = 405 | 1 | This mark is given for finding the total weight of one type of fruit eg  |
| 1785 – (500 + 340 + 405) = 540 | 1 | This mark is given for finding the total weight of the oranges |
| 540 ÷ 90 = 6 | 1 | This mark is given for the correct answer only |
| (b)(i) | 15 × 75 = 1125or1000 ÷ 75 = 13.333…  | 1 | This mark is given for finding the weight of 15 tomatoes or finding how many tomatoes would be in 1 kg |
| No, she will get fewer than 15 tomatoes | 1 | This mark is given for a correct statement supported by working |
| (b)(ii) | Yes, she could if a tomato weighed 66g or less | 1 | This mark is given for a correct statement supported by working |

**Performance data:**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Q** | **Taken from**  | **Total Marks available** | **TOPIC** | **Spec Ref** | **AO** | **% Mean marks** | **Edexcel mean averagesMarks of candidates who achieved grade:** |
| **Q** | **Series** | **Paper** | **ALL** | **5** | **4** | **3** | **2** | **1** | **U** |
| **1** | 12 | Nov-19 | 3F | 3 | Number | N13, R10 | 3 | **96** | 2.89 | 2.98 | 2.96 | 2.93 | 2.75 | 2.21 | 0.83 |
| **2** | 7 | Jun-17 | 3F | 2 | Number | N5 | 1 | **95** | 1.89 | 1.99 | 1.98 | 1.97 | 1.92 | 1.69 | 0.79 |
| **3** | 7 | Nov-19 | 2F | 2 | Ratio | N2, R3 | 1 | **94** | 1.87 | 1.94 | 1.93 | 1.89 | 1.76 | 1.48 | 1.14 |
| **4** | 6 | Jun-19 | 2F | 3 | Number | N13, R10 | 3 | **90** | 2.7 | 2.91 | 2.86 | 2.79 | 2.66 | 2.3 | 1.37 |
| **5** | 7 | Jun-17 | 1F | 3 | Number | N2, N13 | 3 | **81** | 2.42 | 2.73 | 2.63 | 2.51 | 2.34 | 1.96 | 1.08 |
| **6** | 8 | Jun-18 | 1F | 2 | Ratio | R10 | 1 | **74** | 1.48 | 1.94 | 1.88 | 1.68 | 1.18 | 0.57 | 0.27 |
| **7** | 12 | Nov-18 | 3F | 3 | Statistics | S2 | 2 | **67** | 2.02 | 2.78 | 2.57 | 2.07 | 1.27 | 0.62 | 0.48 |
| **8** | 6 | Nov-18 | 1F | 3 | Number | N2, N8 | 3 | **64** | 1.91 | 2.69 | 2.23 | 1.96 | 1.45 | 1.03 | 0.77 |
| **9** | 17 | Jun-19 | 2F | 4 | Ratio | R10,  | 3 | **63** | 2.5 | 3.82 | 3.5 | 2.83 | 1.61 | 0.51 | 0.1 |
| **10** | 12 | Jun-18 | 2F | 3 | Statistics | S2 | 2 | **61** | 1.82 | 2.85 | 2.55 | 1.97 | 1.22 | 0.6 | 0.26 |
| **11** | 12 | Nov-17 | 3F | 2 | Ratio | R10 | 1 | **53** | 1.06 | 1.78 | 1.47 | 1.08 | 0.6 | 0.26 | 0.06 |
| **12** | 17 | Jun-17 | 1F | 4 | Ratio | R10 | 1 | **52** | 2.09 | 3.5 | 3.08 | 2.29 | 1.17 | 0.3 | 0.07 |
| **13** | 21 | Jun-18 | 1F | 4 | Ratio | R1, R9, N13 | 3 | **49** | 1.94 | 3.3 | 2.83 | 2.11 | 1.18 | 0.47 | 0.19 |
| **14** | 18 | Jun-17 | 3F | 5 | Number | N8, N12, R5 | 3 | **49** | 2.45 | 4.56 | 3.84 | 2.52 | 1.03 | 0.2 | 0.02 |
| **15** | 17 | Jun-18 | 1F | 2 | Ratio | R4, R8 | 2 | **45** | 0.89 | 1.72 | 1.41 | 0.92 | 0.43 | 0.17 | 0.05 |
| **16** | 23 | Jun-19 | 3F | 5 | Number | N2, N8, N12, R5, R9 | 3 | **45** | 2.25 | 4.39 | 3.69 | 2.38 | 0.84 | 0.15 | 0.01 |
| **17** | 10 | Jun-17 | 1F | 2 | Ratio | R4 | 1 | **34** | 0.67 | 1.32 | 0.97 | 0.64 | 0.36 | 0.14 | 0.03 |
| **18a** | 4a | Nov-17 | 2F | 3 | Number | N2, N13, R1 | 3 | **62** | 1.86 | 2.65 | 2.27 | 1.88 | 1.43 | 0.97 | 0.36 |
| **18bi** | 4bi | Nov-17 | 2F | 2 | Ratio | R1, N2, N13 | 3 | **73** | 1.46 | 1.87 | 1.69 | 1.52 | 1.16 | 0.76 | 0.17 |
| **18bii** | 4bii | Nov-17 | 2F | 1 | Number | N2,  | 3 | **17** | 0.17 | 0.5 | 0.27 | 0.16 | 0.07 | 0.03 | 0.02 |
|  |   |   |   | **58** |   |   |   |  | **36.34** | **52.22** | **46.61** | **38.1** | **26.43** | **16.42** | **8.07** |