**GCSE Mathematics (1MA1)**

**Themed papers – Income**

**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 an or answer examiner might expect to see** | **Mark** | **Notes** |
|  | 17 × 46  266 ÷ 35 | 1 | This mark is given for a method to find comparable amounts |
| 17 × 46 = 782  266 ÷ 35 = 760 | 1 | Thismark is given for finding cmparable amouts |
| Ellie’s hourly rate is £7.82 which is greater than Reaze’s hourly rate of £7.60 | 1 | This markis given for showing Ellie’s hourly rate is the larger with supporting working |

**Question 2 (Total 3 marks)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Part** | **Working or answer an examiner might expect to see** | **Mark** | **Notes** |
|  | 8 × 11.20 = 89.60  12 × 8.40 = 100.80 | M1 | This mark is given for a method to find how much Bronwin is paid on weekdays and at the weekend |
| 89.60 + 100.80 = 190.40 | M1 | This mark is given for a method to find how much Bronwin is paid in total |
| Bronwin was paid less than £200 | C1 | This mark is given for a correct conclusion supported by correct working |

**Question 3 (Total 3 marks)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Part** | **Working or answer an examiner might expect to see** | **Mark** | **Notes** |
|  | × 80 = 24 | M1 | This mark is given for a method to calculate Adam’s bonus |
| 28 – 24 | M1 | This mark is given for a method to find the difference between Adam’s and Katy’s bonus |
| 4 | A1 | This mark is given for the correct answer only |

**Question 4 (Total 4 marks)**

| **Part** | **Working or answer an examiner might expect to see** | **Mark** | **Notes** |
| --- | --- | --- | --- |
|  | 1 × £12 = £15 | P1 | This mark is given for a process to find Sean’s overtime rate of pay |
| (8 × 12) + (2 × 15) | P1 | This mark is given for a process to find out how much Sean was paid for 10 hours |
| = 96 + 30 | P1 | This mark is given for a process to find out how much Sean was paid for his normal hours added to the amount he was paid overtime |
| 126 | A1 | This mark is given for the correct answer only |

**Question 5 (Total 2 marks)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Part** | **Working an or answer examiner might expect to see** | **Mark** | **Notes** |
|  | 1500 × 0.03 = 45 | M1 | This mark is given for a method of calculating a 3% increase |
| 1500 + 45 = 1545 | A1 | This mark is given for the correct answer only |

**Question 6 (Total 3 marks)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Part** | **Working or answer an examiner might expect to see** | **Mark** | **Notes** |
|  | (13 × 5) + 35 = 100  25 × 20 = 100 | 1 | This mark is given for finding the total entry fees or the total membership fees |
| 250 : 100 : 500 | 1 | This mark is given for finding an unsimplified ratio |
| 5 : 2 : 10 | 1 | This mark is given for the correct answer only |

**Question 7 (Total 4 marks)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Part** | **Working or answer an examiner might expect to see** | **Mark** | **Notes** |
|  | Harry saves 1 –  =  = 25% | P1 | This mark is given for a process to find out how much Harry saves as a percentage |
| Isabel saves  =  = 30% | P1 | This mark is given for a process to find out how much Isabel saves as a percentage |
| 28%, 25%, 30% | P1 | This mark is given for a process to compare equivalent figures |
| Isabel saves the most each month | A1 | This mark is given for a correct conclusion with supporting calculations |

**Question 8 (Total 5 marks)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Part** | **Working or answer an examiner might expect to see** | **Mark** | **Notes** |
|  | 2100 × 0.4 = 840 | P1 | This mark is given for a process to find the three managers’ share of the bonus |
| 2100 – 840 = 1260 | P1 | This mark is given for a process to find the seven salesmens’ share of the bonus |
| 1260 ÷ 7 = 180 | P1 | This mark is given for a process to find one salesman’s share of the bonus |
| 2100 ÷ 10 = 210  = 0.1666 = 16.66% | P1 | This mark is given for a process to find the percentage difference between the actual bonus and the salesman’s suggestion |
| No, the salesman would only receive and extra 16.66%, not 25% | C1 | This mark is given for a correct conclusion supported by correct working |

**Question 9 (Total 4 marks)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Part** | **Working or answer an examiner might expect to see** | **Mark** | **Notes** |
| (a) | 200 + 3300 + 2000 + 0 + 1800 = 7300 | 1 | This mark is given for *fx* with *x* consistent within intervals |
| 7300 ÷ 20 | 1 | This mark is given Ʃ*fx* ÷ Ʃ*f* |
| 365 | 1 | This mark is given for the correct answer only |
| (b) | Yes, since outliers can affect the mean | 1 | This mark is given for a correct comment |

**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 | 13 | Nov-17 | 2F | 3 | Ratio | R11, N2 | 2 | **89** | 2.66 | 2.95 | 2.86 | 2.74 | 2.49 | 1.68 | 0.59 |
| 2 | 10 | Jun-18 | 3F | 3 | Ratio | R11, N13, | 2 | **87** | 2.62 | 2.96 | 2.92 | 2.83 | 2.55 | 1.63 | 0.38 |
| 3 | 11 | Nov-18 | 2F | 3 | Number | N2, N12, R9 | 1 | **86** | 2.57 | 2.87 | 2.8 | 2.67 | 2.2 | 1.19 | 0.57 |
| 4 | 9 | Jun-17 | 1F | 4 | Ratio | R11 | 3 | **53** | 2.1 | 3.35 | 2.78 | 2.13 | 1.49 | 0.86 | 0.38 |
| 5 | 20 | Jun-17 | 1F | 2 | Ratio | R9 | 1 | **53** | 1.05 | 1.81 | 1.58 | 1.13 | 0.54 | 0.13 | 0.03 |
| 6 | 11 | Nov-17 | 2F | 3 | Ratio | N2, R4 | 3 | **50** | 1.51 | 2.48 | 2.04 | 1.54 | 0.92 | 0.36 | 0.06 |
| 7 | 14 | Jun-18 | 1F | 4 | Ratio | R5, R8, R9 | 3 | **44** | 1.77 | 3.6 | 3.03 | 1.87 | 0.64 | 0.19 | 0.05 |
| 8 | 22 | Nov-18 | 1F | 5 | Ratio | N2, R6, R9 | 3 | **39** | 1.93 | 3.61 | 2.66 | 1.97 | 1 | 0.6 | 0.25 |
| 9a | 27a | Nov-17 | 1F | 3 | Statistics | S4 | 1 | **10** | 0.3 | 0.92 | 0.51 | 0.27 | 0.11 | 0.06 | 0.01 |
| 9b | 27b | Nov-17 | 1F | 1 | Statistics | S4 | 3 | **1** | 0.01 | 0.02 | 0.01 | 0 | 0 | 0 | 0 |
|  |  |  |  | **31** |  |  |  |  | **16.52** | **24.57** | **21.19** | **17.15** | **11.94** | **6.7** | **2.32** |