**GCSE Mathematics (1MA1)**

**Themed papers – What’s wrong with the diagram?**

**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 2 marks)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Part** | **Working or answer an examiner might expect to see** | **Mark** | **Notes** |
| (a) | There is a difference in tally marks (11) and frequency (12) for Monday | C1 | This mark is given for a correct comment |
| (b) | An extra picture is needed for Tuesday (it shows 15 CDs, not 18 CDs)  or  7.5 CDs shown for Wednesday is not possible | C1 | This mark is given for a correct comment |

**Question 2 (Total 3 marks)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Part** | **Working or answer an examiner might expect to see** | **Mark** | **Notes** |
|  | No labels on horizontal axis | C1 | This communication mark is given for a correct statement |
| No 0 on vertical axis | C1 | This communication mark is given for a correct statement |
| Middle column has incorrect height | C1 | This communication mark is given for a correct statement |

**Question 3 (Total 2 marks)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Part** | **Working or answer an examiner might expect to see** | **Mark** | **Notes** |
|  | incorrect key; units should be years  missing entry (of 29)  incorrect order in the “4” leaf | C2 | These marks are given for any two error found amongst the three which appear on the diagram  (C1 is given for one error found) |

**Question 4 (Total 2 marks)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Part** | **Working or answer an examiner might expect to see** | **Mark** | **Notes** |
|  | The line of best fit is not in the correct position | C1 | This mark is given for correct statement |
| The scale is incorrect (140 should be 150) | C1 | This mark is given for correct statement |

**Question 5 (Total 2 marks)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Part** | **Working or answer an examiner might expect to see** | **Mark** | **Notes** |
|  | For example:  There is no frequency label  The *y*-axis is not labelled  The polygon should not be closed  The polygon should not have a line at the bottom  The first and last points should not be connected  The point (15, 6) has been plotted incorrectly  The point (15, 6) has been plotted at (15, 8) | C2 | These marks are given for two correct statements  (C1 is given for one correct statement) |

**Question 6 (Total 2 marks)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Part** | **Working or answer an examiner might expect to see** | **Mark** | **Notes** |
|  | Probabilities for the first throw should add up to 1 (rather than 0.9) | C1 | This mark is given for a correct statement |
| 0.35 and 0.65 have been reversed on one set of the branches for the second throw | C1 | This mark is given for a correct statement |

**Question 7 (Total 2 marks)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Part** | **Working or answer an examiner might expect to see** | **Mark** | **Notes** |
|  | For example:  Points should be joined by straight lines, not curved lines  The first quarter not shown  9.5 is missing from the vertical axis  The vertical axis does not start from zero | B1 | This mark is given for a first correct statement |
| B1 | This mark is given for a second correct statement |

**Question 8 (Total 1 mark)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Part** | **Working or answer an examiner might expect to see** | **Mark** | **Notes** |
|  | The graph is drawn with line segments, rather than a curve | 1 | This mark is given for a correct statement |

**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** |
| 1a | 5a | Jun-17 | 2F | 1 | Statistics | S2 | 2 | 90 | 0.9 | 0.95 | 0.94 | 0.91 | 0.88 | 0.83 | 0.64 |
| 1b | 5b | Jun-17 | 2F | 1 | Statistics | S2 | 2 | 74 | 0.74 | 0.88 | 0.84 | 0.78 | 0.69 | 0.53 | 0.28 |
| 2 | 6 | Mock Set 2 | 1F | 3 | Statistics | − | − | − | − | − | − | − | − | − | − |
| 3 | 16 | Mock Set 3 | 1F | 2 | Statistics | − | − | − | − | − | − | − | − | − | − |
| 4 | 21 | Nov-18 | 2F | 2 | Statistics | S6 | 2 | 53 | 1.05 | 1.26 | 1.21 | 1.06 | 0.87 | 0.59 | 0.28 |
| 5 | 21 | Nov-19 | 2F | 2 | Statistics | S2 | 2 | 44 | 0.88 | 1.27 | 1.12 | 0.88 | 0.56 | 0.3 | 0.14 |
| 6 | 22 | Jun-18 | 3F | 2 | Probability | P4. P7, P8 | 2 | 43 | 0.86 | 1.44 | 1.23 | 0.95 | 0.54 | 0.17 | 0.03 |
| 7 | 27 | Jun-19 | 3F | 2 | Statistics | S2 | 2 | 30 | 0.59 | 0.97 | 0.77 | 0.6 | 0.43 | 0.26 | 0.12 |
| 8 | 29 | Nov-17 | 1F | 1 | Algebra | A12 | 2 | 22 | 0.22 | 0.52 | 0.32 | 0.21 | 0.13 | 0.08 | 0.04 |
|  |  |  |  | **16** |  |  |  |  | **5.24** | **7.29** | **6.43** | **5.39** | **4.1** | **2.76** | **1.53** |