**GCSE Mathematics (1MA1)**

**Themed papers – Statistical diagrams: Pictograms**

**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** |
| (a) | 8 + 8 + 8 = 24 | B1 | This mark is given for the correct answer only |
| (b) |  | C1 | This mark is given for a diagram which represents 12 pictorially |
| (c) | (9 × 8) + ( × 8) + ( × 8) + ( × 8) | M1 | This mark is given for a method to find the total number of pictures sold |
| 84 | A1 | This mark is given for finding the correct total number of pictures sold |

**Question 2 (Total 3 marks)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Part** | **Working or answer an examiner might expect to see** | **Mark** | **Notes** |
|  | Apple = 12, Cherry = 5, Pear = 6 | M1 | This mark is given for method to find out how many of each tree there is |
| 30 – (12 + 5 + 6) =  30 – 23 = 7 | M1 | This mark is given for a method to find out how many plum trees are in the orchard |
|  | C1 | This mark is given for a completely correct pictogram |

**Question 3 (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 4 (Total 5 marks)**

| **Part** | **Working or answer an examiner might expect to see** | **Mark** | **Notes** |
| --- | --- | --- | --- |
| (a)(i) | 3 × 8 = 24 | B1 | This mark is given for the correct answer only |
| (a)(ii) | 2 × 8 = 18 | B1 | This mark is given for the correct answer only |
| (b) | Ratio of records sold on  Wednesday : Thursday = 1 : 8 | M1 | This mark is given for a method to find the ratio of records sold on Wednesday to Thursday |
| 36 ÷ 9 = 4  Number of records sold on Wednesday = 4  Number of records sold on Thursday = 32 | A1 | This mark is given for finding the correct number of records sold on Wednesday and Thursday |
|  | C1 | This mark is given for a fully correct diagram |

**Question 5 (Total 3 marks)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Part** | **Working or answer an examiner might expect to see** | **Mark** | **Notes** |
|  | 1 wheel = 4 cycles | 1 | This mark is given for deducing the one wheel = 4 cycles |
| = 4 cycles | 1 | This mark is given for either 2 wheels shown for Friday or 3 wheels for Saturday |
| 1 | This mark is given for a fully correct pictogram, including a key |

**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 | 6a | Nov-19 | 1F | 1 | Statistics | S2 | 2 | 99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.98 | 0.94 | 0.87 |
| 1b | 6b | Nov-19 | 1F | 1 | Statistics | S2 | 2 | 97 | 0.97 | 0.99 | 0.98 | 0.97 | 0.94 | 0.92 | 0.85 |
| 1c | 6c | Nov-19 | 1F | 2 | Statistics | S2 | 2 | 89 | 1.77 | 1.9 | 1.86 | 1.79 | 1.65 | 1.46 | 1.23 |
| 2 | 7 | Nov-18 | 1F | 3 | Statistics | S2 | 2 | 91 | 2.72 | 2.88 | 2.84 | 2.76 | 2.56 | 2.19 | 1.83 |
| 3a | 5a | Jun-17 | 2F | 1 | Statistics | S2 | 2 | 90 | 0.9 | 0.95 | 0.94 | 0.91 | 0.88 | 0.83 | 0.64 |
| 3b | 5b | Jun-17 | 2F | 1 | Statistics | S2 | 2 | 74 | 0.74 | 0.88 | 0.84 | 0.78 | 0.69 | 0.53 | 0.28 |
| 4ai | 9ai | Jun-19 | 2F | 1 | Statistics | S2 | 2 | 98 | 0.98 | 1 | 1 | 0.99 | 0.98 | 0.96 | 0.75 |
| 4aii | 9aii | Jun-19 | 2F | 1 | Statistics | S2 | 2 | 92 | 0.92 | 0.99 | 0.98 | 0.96 | 0.91 | 0.77 | 0.44 |
| 4b | 9b | Jun-19 | 2F | 3 | Statistics | R5, S2 | 2 | 39 | 1.18 | 2.59 | 1.88 | 1.12 | 0.56 | 0.23 | 0.08 |
| 5 | 6 | Nov-17 | 3F | 1 | Ratio | R16 | 3 | 24 | 0.24 | 0.49 | 0.32 | 0.24 | 0.15 | 0.06 | 0.02 |
|  |  |  |  | **15** |  |  |  |  | **11.41** | **13.66** | **12.63** | **11.51** | **10.3** | **8.89** | **6.99** |