**GCSE Mathematics (1MA1)**

**Themed papers – Inequalities: Shaded Region**

**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 4 marks)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Part** | **Working or answer an examiner might expect to see** | **Mark** | **Notes** |
|  | *y* ≥ −2, *y* ≤ −2 or *y* = −2 | M1 | This mark is given for *y* and −2 indicated in an equality or inequality |
| *y* ≥ *x*, *y* ≤ *x* or *y* = *x*, | M1 | This mark is given for *y* and *x* indicated in an equality or inequality |
| *y* ≤ *x +* 1, *y* ≥ *x +* 1 or *y* = *x +* 1, | M1 | *y* = *x +*1 indicated in an equality or inequality |
| *y* ≥ −2, *y* ≥ *x* and *y* ≤ *x +* 1 | A1 | This mark is given for three correct inequalities |

**Question 2 (Total 3 marks)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Part** | **Working or answer an examiner might expect to see** | **Mark** | **Notes** |
|  | lines *y* = 1, *x* + *y* = 5 and *y* = 2*x* drawn | 2 | These two marks are given for all lines correctly drawn  (1 mark is given for any two lines correctly drawn) |
| **R** | 1 | This mark is given for a fully correct region indicated with all lines correct |

**Question 3 (Total 2 marks)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Part** | **Working or answer an examiner might expect to see** | **Mark** | **Notes** |
|  | *x* + *y* ≤ 7 rather than *x* + *y* ≤ 6  *x* ≥ 0rather than *y* ≥ 0  *y ≥ x+* 2 rather than *y* ≤ *x* + 2 | B2 | Two marks are given for two errors identified; one mark is given for one error identified |

**Question 4 (Total 3 marks)**

| **Part** | **Working or answer an examiner might expect to see** | **Mark** | **Notes** |
| --- | --- | --- | --- |
|  | **R** | B2 | These marks are given for the lines *x* = 4, 2*x* + *y* = 6 and *y* = *x* drawn  (B1 is given for one or two of these lines drawn) |
| A1 | This mark is given for the correct region **R** identified |

**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** | **9** | **8** | **7** | **6** | **5** | **4** | **3** | **2** | **1** | **U** |
| 1 | 13 | June 2017 | 3H | 4 | Algebra | A22 | 2 | 34 | 1.37 | 3.25 | 2.66 | 1.98 | 1.29 | 0.67 | 0.24 | 0.06 | - | - | 0.02 |
| 2 | 14 | Nov 2017 | 2H | 3 | Algebra | A19 A22 | 2 | 6 | 0.19 | 2.38 | 2.06 | 1.35 | 0.66 | 0.31 | 0.11 | 0.02 |  |  | 0 |
| 3 | 16 | Mock Set 1 | 2H | 2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 4 | 15 | Mock Set 3 | 3H | 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
|  |  |  |  | **12** |  |  |  |  | **1.56** | **5.63** | **4.72** | **3.33** | **1.95** | **0.98** | **0.35** | **0.08** | **-** | **-** | **0.02** |