| Paper: 1MA1/3H | | | | |
|---|---|---|---|---|
| **Question** | **Answer** | **Mark** | **Mark scheme** | **Additional guidance** |
| 15<br><br>**Q1** | (−7, −1) | M1<br><br><br><br><br>A1 | for a method which shows understanding of the type of transformation eg reflection in the *y* axis or translation $\binom{0}{-3}$ or "(0 units right and) 3 units down"<br>**or** for *x* coordinate as −7 **or** *y* coordinate as −1<br><br>for (−7, −1) | "Reflection" or "Translation" alone is insufficient.<br>Note that the −7 or the −1 may appear in the working space, not necessarily in the final answer. |

| Paper: 1MA1/1H | | | | |
|---|---|---|---|---|
| **Question** | **Answer** | **Mark** | **Mark scheme** | **Additional guidance** |
| 18 (a) | sketch | B1 | for appropriate sketch which crosses the $x$ axis at (2,0) and (4,0), minimum point at (3,−1) and end points at (1,3) and (5,3) | Allow some tolerance on the points if the intention is clear. |
| **Q2** (b) | $y = g(-x)$ | B1 | cao | |

| Paper: 1MA1/1H | | | | |
|---|---|---|---|---|
| **Question** | **Answer** | **Mark** | **Mark scheme** | **Additional guidance** |
| 20 (a) **Q3** | graph | C2 | for a translation of the graph by the vector $\begin{pmatrix}-1\\-3\end{pmatrix}$ | Condone graph of $y = f(-x)$ also being drawn on the grid |
| | | (C1 | for a translation of the graph by the vector $\begin{pmatrix}-1\\b\end{pmatrix}$ where $b \neq -3$ or $\begin{pmatrix}a\\-3\end{pmatrix}$ where $a \neq -1$ | Correct vector gets 1 mark |
| | | | **or** for a translation by the vector $\begin{pmatrix}-1\\-3\end{pmatrix}$ of 3 or 4 critical points) | |
| (b) | 2, 1 | B1 | cao | |

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|---|---|---|---|---|
| **Question** | **Answer** | **Mark** | **Mark scheme** | **Additional guidance** |
| 23 (a) | Sketch | B1 | for appropriate sketch which crosses the $x$ axis at (–3, 0), (–1, 0), (0, 0) and passes through (–2, 2) with end points in the correct square | Allow some tolerance on the points and in drawing the curve if the intention is clear |
| **Q4** (b) | $y = -g(x)$ | B1 | oe | Accept $-y = g(x)$ |