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| **Topic/Skill** | **Definition/Tips** | **Example**  **Topic: Inequalities** |
| 1. Inequality | An inequality says that two values are **not equal**.  means that a is not equal to b. |  |
| 2. Inequality symbols | means **x is greater than 2**  means **x is less than 3**  means **x is greater than or equal to 1**  means **x is less than or equal to 6** | State the integers that satisfy  -1, 0, 1, 2, 3, 4 |
| 3. Inequalities on a Number Line | Inequalities can be shown on a number line.  **Open circles** are used for numbers that are **less than or greater than**  **Closed circles** are used for numbers that are **less than or equal or greater than or equal** |  |
| 4. Graphical Inequalities | Inequalities can be represented on a coordinate grid.  If the inequality is **strict** () then use a **dotted line**.  If the inequality is **not strict** () then use a **solid line**.  **Shade** the **region** which satisfies all the inequalities. | Shade the region that satisfies: |
| 5. Quadratic Inequalities | **Sketch the quadratic graph** of the inequality.  If the expression is then the answer will be **above the x-axis**.  If the expression is then the answer will be **below the x-axis**.  Look carefully at the inequality symbol in the question.  Look carefully if the quadratic is a **positive or negative parabola**. | Solve the inequality  Sketch the quadratic:    The required region is below the x-axis, so the final answer is:  If the question had been , the answer would have been: |
| 6. Set Notation | A **set** is a **collection of things**, usually numbers, denoted with brackets  means ‘the set of all x’s, such that x is greater than or equal to 7’  The ‘x’ can be replaced by any letter.  Some people use ‘:’ instead of ‘|’ | is a set. |

**Knowledge Organiser**