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| **Topic/Skill** | **Definition/Tips**  **Topic: Graphs and Graph Transformations** | **Example** |
| 1. Coordinates | Written in **pairs**. The **first** term is the **x-coordinate** (movement **across**). The **second** term is the **y-coordinate** (movement **up or down**) | A: (4,7)  B: (-6,-3) |
| 2. Linear Graph | **Straight line** graph.  The **equation** of a linear graph can contain an **x-term**, a **y-term** and a **number**. | Example:  Image result for linear graphOther examples: |
| 3. Quadratic Graph | A ‘**U-shaped**’ curve called a **parabola**.  The equation is of the form  , where , and are numbers, .  If **,** the parabola is **upside down**. | Image result for quadratic graph definition math |
| 4. Cubic Graph | The equation is of the form , where  **is an number**.  If , the curve is **increasing**.  If , the curve is **decreasing**. | Image result for cubic function definition mathImage result for cubic function definition math |
| 5. Reciprocal Graph | The equation is of the form , where  **is a number** and .  The graph has **asymptotes** on the **x-axis and y-axis**. | Image result for reciprocal graph |
| 6. Asymptote | A **straight line** that a graph **approaches** but **never touches**. | Image result for asymptote definition maths |
| 7. Exponential Graph | The equation is of the form **,** where is a number called the **base**.  If the graph **increases**.  If , the graph **decreases**.  The graph has an **asymptote** which is the **x-axis**. | Image result for exponential function definition math |
| 8. | Key Coordinates:  is never more than 1 or less than -1.  Pattern repeats every 360°. | Image result for sine graph gcse |
| 9. | Key Coordinates:  is never more than 1 or less than -1.  Pattern repeats every 360°. | cosine graph |
| 10. | Key Coordinates:  **Asymptotes** at and  Pattern repeats every 360°. | tan graph |
| 11. | **Vertical translation** up a units. | Image result for graph transformations vertical translation |
| 12. | **Horizontal translation** left a units. | Image result for graph transformations vertical translation |
| 13. | **Reflection** over the **x-axis**. | Image result for graph transformations reflections |
| 14. | **Reflection** over the **y-axis**. | Image result for graph transformations reflections |

**Knowledge Organiser**