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| **Topic/Skill** | **Definition/Tips** | **Example**  **Topic: Indices** |
| 1. Square Number | The number you get when you **multiply a number by itself**. | **1, 4, 9, 16, 25, 36, 49, 64, 81, 100, 121, 144, 169, 196, 225…** |
| 2. Square Root | The **number you multiply by itself** to get another number.  The reverse process of squaring a number. | because |
| 3. Solutions to | **Equations** involving **squares** have **two solutions**, one **positive** and one **negative**. | Solve  This can also be written as |
| 4. Cube Number | The number you get when you **multiply a number by itself and itself again**. | 1, 8, 27, 64, 125… |
| 5. Cube Root | The **number you multiply by itself and itself again** to get another number.  The reverse process of cubing a number. | because |
| 6. Powers of… | The powers of a number are that **number raised to various powers**. | The powers of 3 are:        etc. |
| 7. Multiplication Index Law | When **multiplying** with the same base (number or letter), **add the powers**. |  |
| 8. Division Index Law | When **dividing** with the same base (number or letter), **subtract the powers**. |  |
| 9. Brackets Index Laws | When raising a power to another power, multiply the powers together. |  |
| 10. Notable Powers |  |  |
| 11. Negative Powers | A negative power performs the reciprocal. |  |
| 12. Fractional Powers | The denominator of a fractional power acts as a ‘root’.  The numerator of a fractional power acts as a normal power. |  |
| **Topic/Skill** | **Definition/Tips** | **Example**  **Topic: Standard Form** |
| 1. Standard Form |  | 8400 = 8.4 x  0.00036 = 3.6 x |
| 2. Multiplying or Dividing with Standard Form | Multiply: **Multiply the numbers** and **add the powers**.  Divide: **Divide the numbers** and **subtract the powers**. |  |
| 3. Adding or Subtracting with Standard Form | **Convert** in to **ordinary** numbers, **calculate** and then **convert back** in to standard form |  |

**Knowledge Organiser**