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| **Topic/Skill** | **Definition/Tips** | **Example**  **Topic: Congruence and Similarity** |
| 1. Congruent Shapes | Shapes are congruent if they are **identical** - **same shape** and **same size**.  Shapes can be rotated or reflected but still be congruent. |  |
| 2. Congruent Triangles | 4 ways of proving that two triangles are congruent:  1. **SSS** (Side, Side, Side)  2. **RHS** (Right angle, Hypotenuse, Side)  3. **SAS** (Side, Angle, Side)  4. **ASA** (Angle, Side, Angle) or **AAS**  ASS does not prove congruency. |  |
| 3. Similar Shapes | Shapes are similar if they are the **same shape but different sizes**.  The proportion of the matching sides must be the same, meaning the ratios of corresponding sides are all equal. |  |
| 4. Scale Factor | The **ratio of corresponding sides** of two similar shapes.  To find a scale factor, **divide a length** on one shape **by the corresponding length** on a similar shape. | Image result for math definition scale factor  Scale Factor = |
| 5. Finding missing lengths in similar shapes | 1. Find the **scale factor**.  2. **Multiply or divide** the corresponding side to find a missing length.  If you are finding a missing length on the larger shape you will need to multiply by the scale factor.  If you are finding a missing length on the smaller shape you will need to divide by the scale factor. | Scale Factor = |
| 6. Similar Triangles | To show that two triangles are similar, show that:  1. The three sides are in the same proportion  2. Two sides are in the same proportion, and their included angle is the same  3. The three angles are equal | image: two triangles: left triangle: top Y corner: 85 degrees, right Z corner: 40 degrees, left corner: X. Right triangle: same labels: Y: 85 degrees, X: 55 degrees.  image: two triangles: left triangle: top Y corner: 85 degrees, right Z corner: 40 degrees, left corner: X. Right triangle: same labels: Y: 85 degrees, X: 55 degrees. |

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