
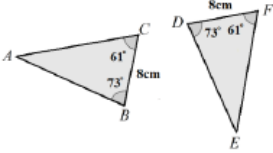

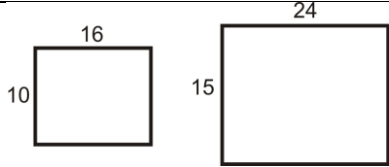
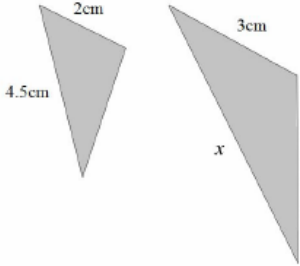


## Topic: Congruence and Similarity

Topic/Skill	Definition/Tips	Example
1. Congruent Shapes	<p>Shapes are congruent if they are <b>identical - same shape and same size.</b></p> <p>Shapes can be rotated or reflected but still be congruent.</p>	
2. Congruent Triangles	<p>4 ways of proving that two triangles are congruent:</p> <ol style="list-style-type: none"> <li>1. <b>SSS</b> (Side, Side, Side)</li> <li>2. <b>RHS</b> (Right angle, Hypotenuse, Side)</li> <li>3. <b>SAS</b> (Side, Angle, Side)</li> <li>4. <b>ASA</b> (Angle, Side, Angle) or <b>AAS</b></li> </ol> <p><u>ASS does not prove congruency.</u></p>	 <p style="text-align: center;"><math>BC = DF</math>  <math>\angle ABC = \angle EDF</math>  <math>\angle ACB = \angle EFD</math>  <math>\therefore</math> The two triangles are congruent by AAS.</p>
3. Similar Shapes	<p>Shapes are similar if they are the <b>same shape but different sizes.</b></p> <p>The proportion of the matching sides must be the same, meaning the ratios of corresponding sides are all equal.</p>	
4. Scale Factor	<p>The <b>ratio of corresponding sides</b> of two similar shapes.</p> <p>To find a scale factor, <b>divide a length</b> on one shape <b>by the corresponding length</b> on a similar shape.</p>	 <p style="text-align: center;">Scale Factor = <math>15 \div 10 = 1.5</math></p>
5. Finding missing lengths in similar shapes	<ol style="list-style-type: none"> <li>1. Find the <b>scale factor</b>.</li> <li>2. <b>Multiply or divide</b> the corresponding side to find a missing length.</li> </ol> <p>If you are finding a missing length on the larger shape you will need to multiply by the scale factor.</p> <p>If you are finding a missing length on the smaller shape you will need to divide by the scale factor.</p>	 <p style="text-align: center;">Scale Factor = <math>3 \div 2 = 1.5</math>  <math>x = 4.5 \times 1.5 = 6.75\text{cm}</math></p>
6. Similar Triangles	<p>To show that two triangles are similar, show that:</p> <ol style="list-style-type: none"> <li>1. The three sides are in the same proportion</li> <li>2. Two sides are in the same proportion, and their included angle is the same</li> <li>3. The three angles are equal</li> </ol>	