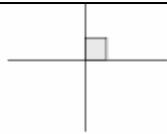
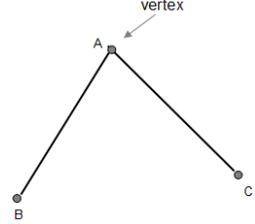
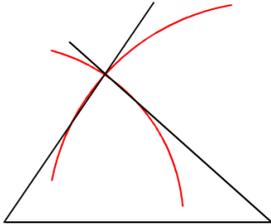
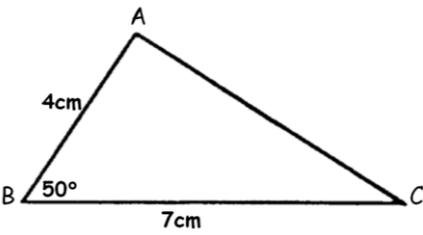
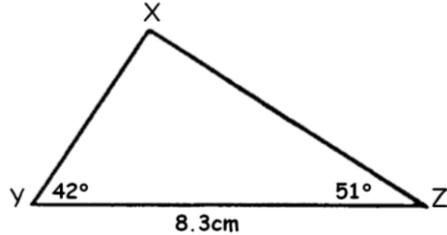
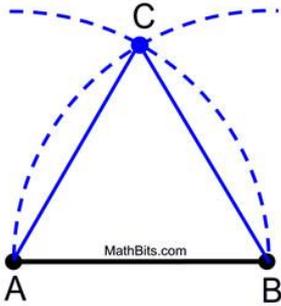
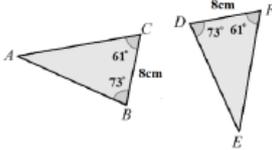


## Year 7 Knowledge Organisers Unit 9

### Topic: Loci and Constructions

Topic/Skill	Definition/Tips	Example
1. Parallel	Parallel lines never meet.	
2. Perpendicular	Perpendicular lines are at right angles. There is a $90^\circ$ angle between them.	
3. Vertex	A corner or a point where two lines meet.	
8. Constructing Triangles (Side, Side, Side)	<ol style="list-style-type: none"> <li>1. Draw the base of the triangle using a ruler.</li> <li>2. Open a pair of compasses to the width of one side of the triangle.</li> <li>3. Place the point on one end of the line and draw an arc.</li> <li>4. Repeat for the other side of the triangle at the other end of the line.</li> <li>5. Using a ruler, draw lines connecting the ends of the base of the triangle to the point where the arcs intersect.</li> </ol>	
9. Constructing Triangles (Side, Angle, Side)	<ol style="list-style-type: none"> <li>1. Draw the base of the triangle using a ruler.</li> <li>2. Measure the angle required using a protractor and mark this angle.</li> <li>3. Remove the protractor and draw a line of the exact length required in line with the angle mark drawn.</li> <li>4. Connect the end of this line to the other end of the base of the triangle.</li> </ol>	
10. Constructing Triangles (Angle, Side, Angle)	<ol style="list-style-type: none"> <li>1. Draw the base of the triangle using a ruler.</li> <li>2. Measure one of the angles required using a protractor and mark this angle.</li> <li>3. Draw a straight line through this point from the same point on the base of the triangle.</li> <li>4. Repeat this for the other angle on the other end of the base of the triangle.</li> </ol>	

<p>11. Constructing an Equilateral Triangle (also makes a 60° angle)</p>	<ol style="list-style-type: none"> <li>1. Draw the base of the triangle using a ruler.</li> <li>2. Open the pair of compasses to the exact length of the side of the triangle.</li> <li>3. Place the sharp point on one end of the line and draw an arc.</li> <li>4. Repeat this from the other end of the line.</li> <li>5. Using a ruler, draw lines connecting the ends of the base of the triangle to the point where the arcs intersect.</li> </ol>	
<p>12. Congruent Shapes</p>	<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>	
<p>13. Congruent Triangles</p>	<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>