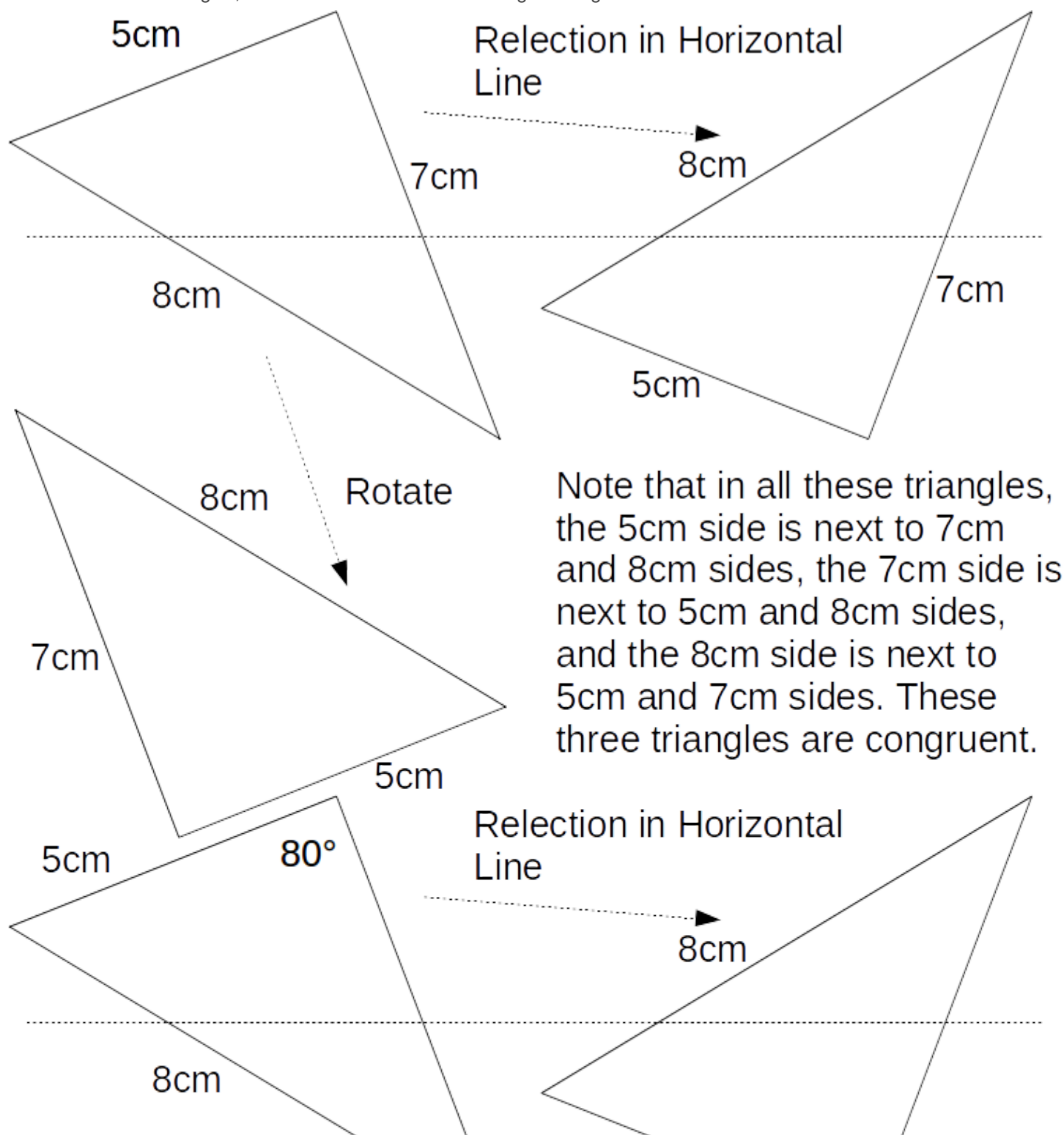


Congruent Triangles

In order to prove that two triangles are congruent - so that the triangles can fit over each other, possible after a rotation or reflection or both - we need the triangles to have three features that are the same, with at least one of them being a length.

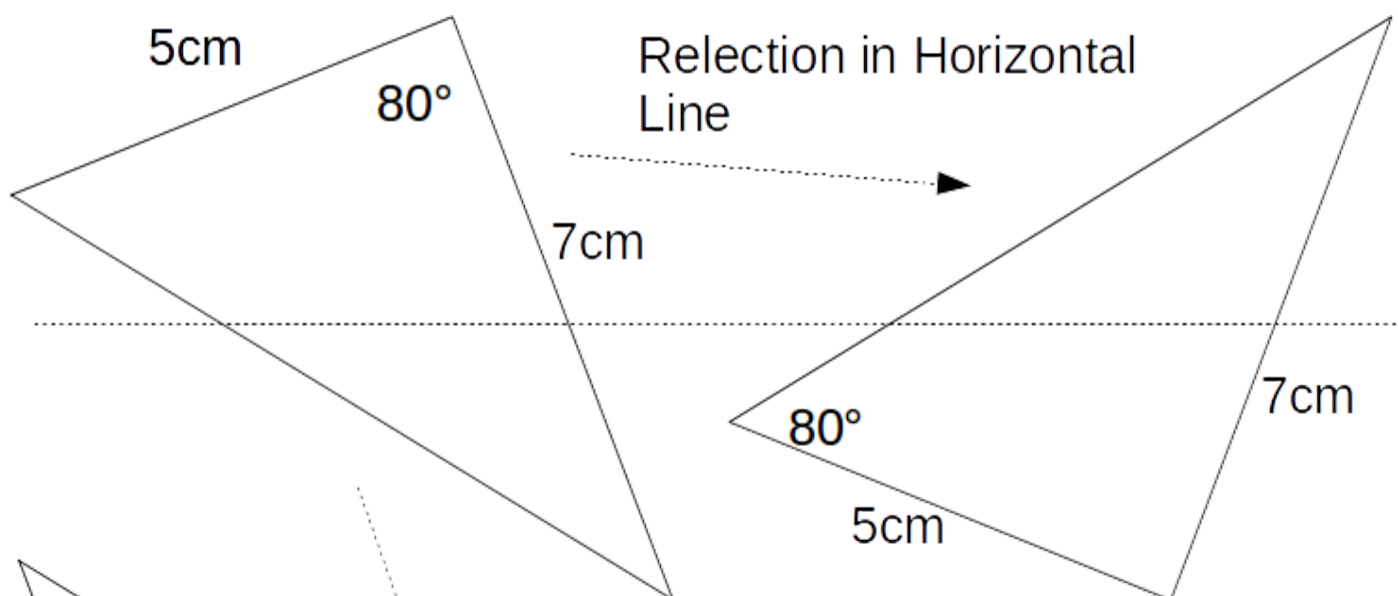
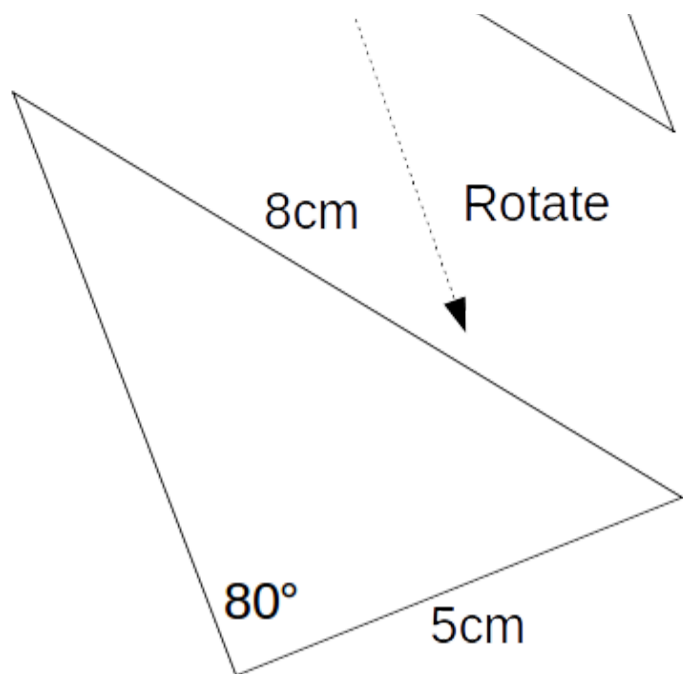
These could be

1. Three sides
2. Two sides and an angle, with these features on each triangle arranged the same relative to one another
2. One side and two angles, with these features on each triangle arranged the same relative to one another

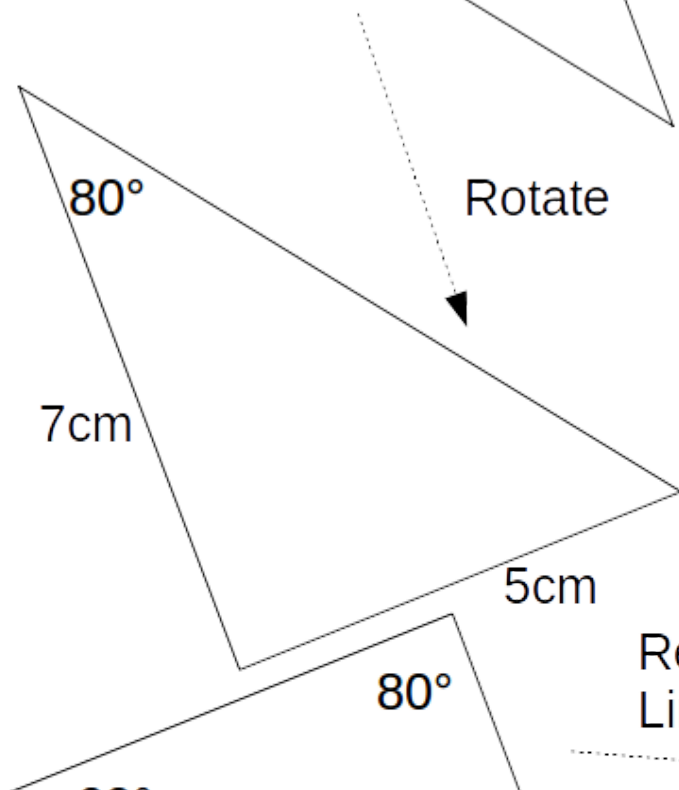




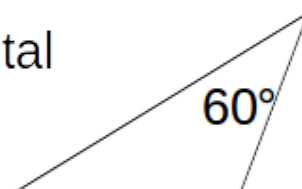
Note that in all these triangles, the 5cm side is next to 80° angle opposite the 8cm side. These three triangles are congruent.

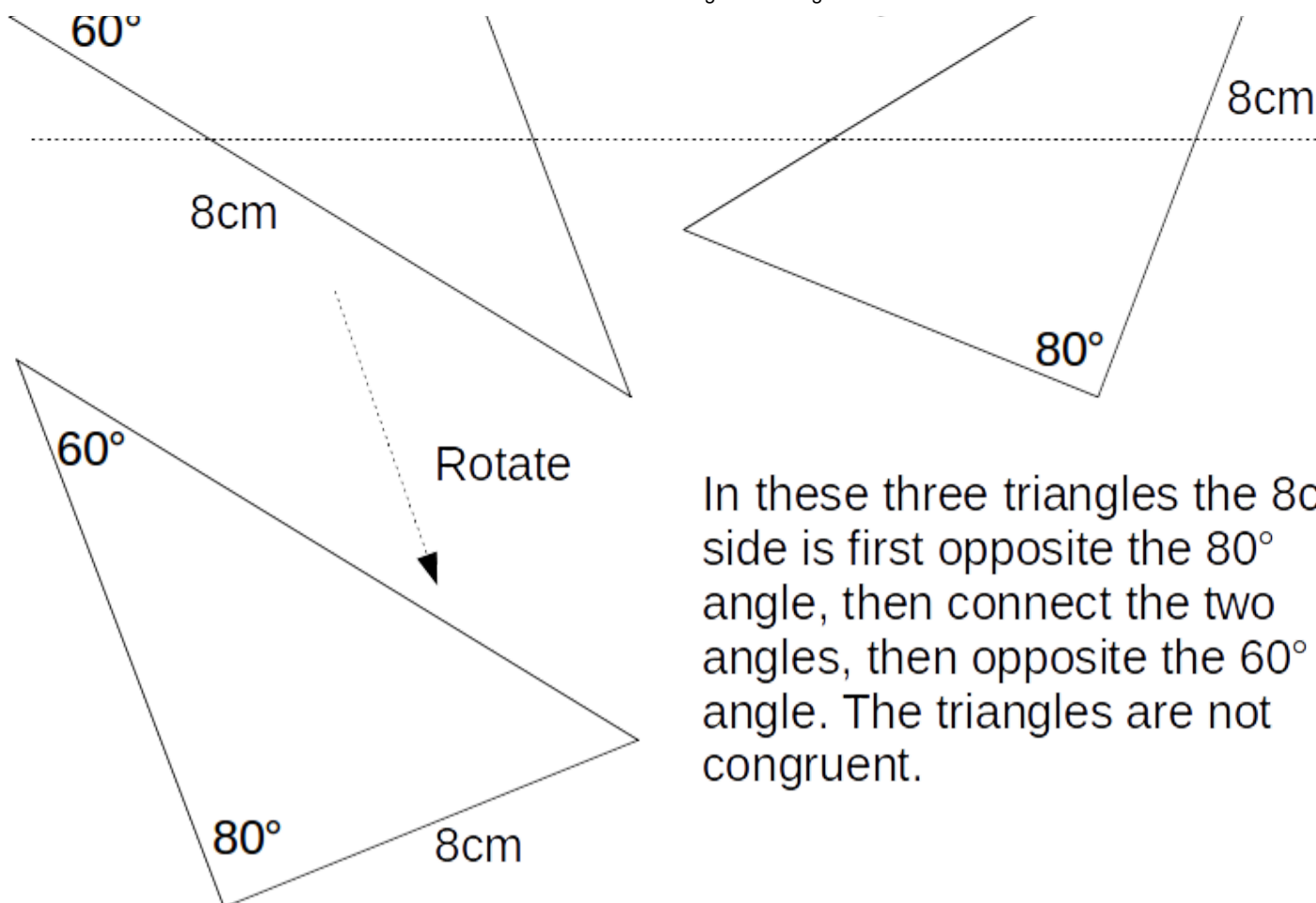


None of these three triangles are congruent. In each triangle the angle is opposite a different side. The angles and sides do not have the same relation to each other. The triangles are not congruent.



Reflection in Horizontal Line





In these three triangles the 8cm side is first opposite the 80° angle, then connect the two angles, then opposite the 60° angle. The triangles are not congruent.

If triangles have corresponding identical angles, they may or may not be congruent. A triangle may be larger than another triangle having identical corresponding angles. Obviously these triangles are not congruent. They are similar.