

Chapter 9

MORE TRIANGLE CONGRUENCIES



Things which coincide with one another are equal to one another.

— Euclid, Elements, Common Notion 4

This chapter is a continuation of the triangle congruence properties studied in Chapter 6.

PROBLEM 9.1 SIDE-SIDE-SIDE (SSS)

- a. *Are two triangles congruent if the two triangles have congruent corresponding sides? Look at plane, spheres, and hyperbolic planes.* See Figure 9.1.

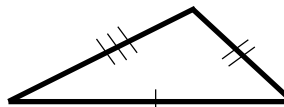


Figure 9.1 SSS

SUGGESTIONS

Start investigating SSS by making two triangles coincide as much as possible and see what happens. For example, in Figure 9.2, if we line up one pair of corresponding sides of the triangles, we have two different orientations for the other pairs of sides as depicted in Figure 9.2. Of course, it is up to you to determine if each of these orientations is actually possible, and to prove or disprove SSS. Again, symmetry can be very useful here.