Lesson 8 Summary

We learned earlier that two polygons are similar when there is a sequence of translations, rotations, reflections, and dilations taking one polygon to the other. When the polygons are triangles, we only need to check that that both triangles have two corresponding angles to show they are similar—can you tell why?

* If you know 2 <'s in a Δ you can find the 3rd < because

Here is an example. Triangle $ABC$ and triangle $DEF$ each have a 30 degree angle and all of the angles total 180°.

We can translate $A$ to $D$ and then rotate so that the two 30 degree angles are aligned, giving this picture:

* If all of the corresponding <'s match in a similar Δ then the corresponding side lengths are automatically proportional.

Now a dilation with center $D$ and appropriate scale factor will move $C'$ to $F$. This dilation also moves $B'$ to $E$, showing that triangles $ABC$ and $DEF$ are similar.