Lesson 8: Similarity

Classwork

Example 1

In the picture below, we have a triangle $ABC$ that has been dilated from center $O$ by a scale factor of $r = \frac{1}{2}$. It is noted by $A'B'C'$. We also have triangle $A''B''C''$, which is congruent to triangle $A'B'C'$ (i.e., $\triangle A'B'C' \cong \triangle A''B''C''$).

Describe the sequence that would map triangle $A''B''C''$ onto triangle $ABC$. 
Exercises

1. Triangle $ABC$ was dilated from center $O$ by scale factor $r = \frac{1}{2}$. The dilated triangle is noted by $A'B'C'$. Another triangle $A''B''C''$ is congruent to triangle $A'B'C'$ (i.e., $\triangle A''B''C'' \cong \triangle A'B'C'$). Describe a dilation followed by the basic rigid motion that would map triangle $A''B''C''$ onto triangle $ABC$. 

![Diagram of triangles A, B, C, A', B', C', A'', B'', C'', O]
2. Describe a sequence that would show $\triangle ABC \sim \triangle A'B'C'$.

![Diagram of triangle ABC and A'B'C' with coordinates and units labeled]

3. Are the two triangles shown below similar? If so, describe a sequence that would prove $\triangle ABC \sim \triangle A'B'C'$. If not, state how you know they are not similar.

![Diagram of triangle ABC and A'B'C' with measurements]
4. Are the two triangles shown below similar? If so, describe a sequence that would prove \( \triangle ABC \sim \triangle A'B'C' \). If not, state how you know they are not similar.