Task

Triangles $ABC$ and $PQR$ below share two pairs of congruent angles as marked:

a. Explain, using dilations, translations, reflections, and/or rotations, why $\triangle PQR$ is similar to $\triangle ABC$.

b. Are angles $C$ and $R$ congruent?

c. Can you show the similarity in part a without using a reflection? What about without using a dilation? Explain.

d. Suppose $DEF$ and $KLM$ are two triangles with $m(\angle D) = m(\angle K)$ and $m(\angle E) = m(\angle L)$. Are triangles $DEF$ and $KLM$ similar?