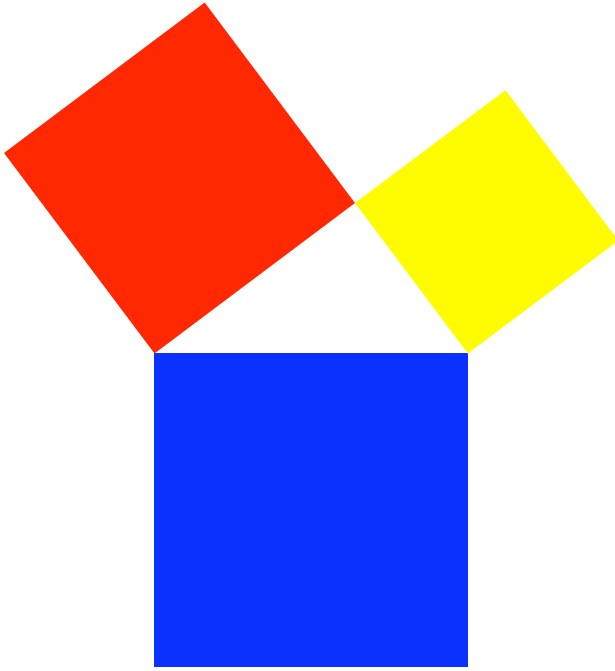
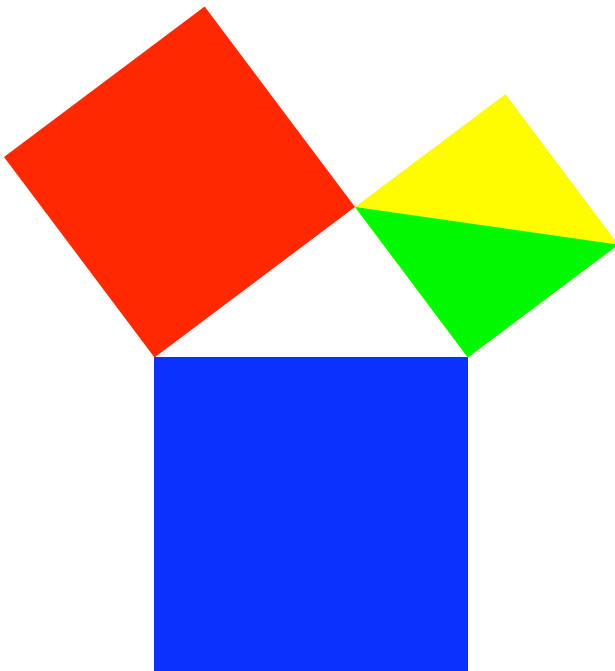

Euclid's proof of the Pythagorean theorem

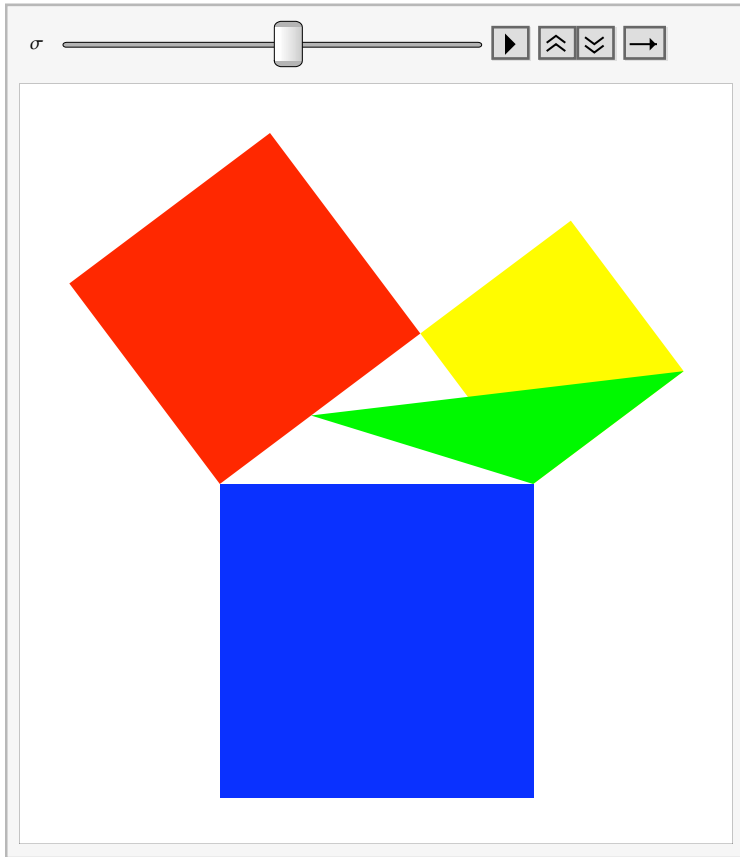
- Start

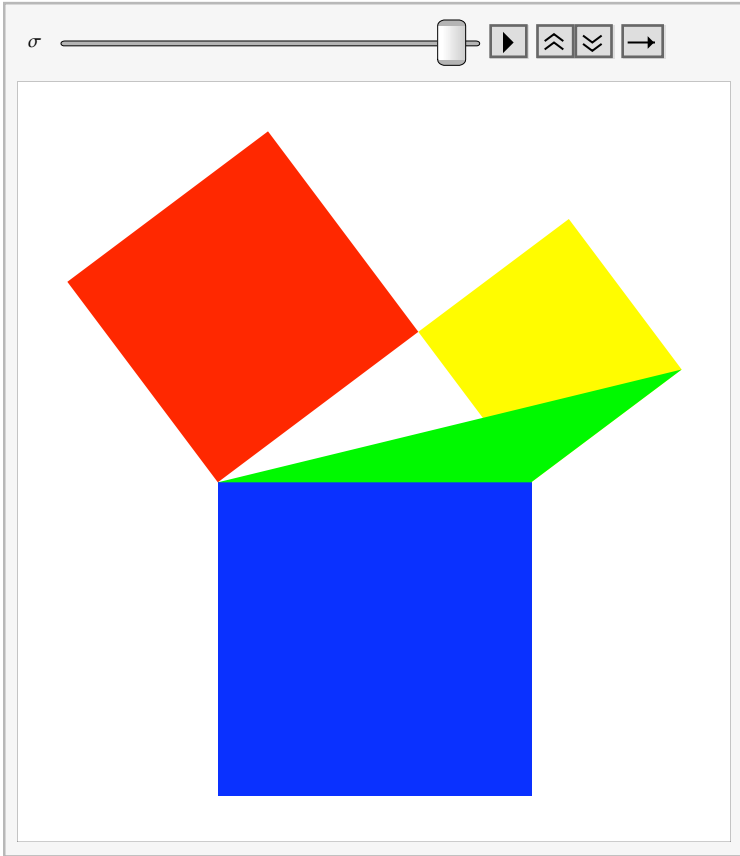


- Split one square into two congruent triangles

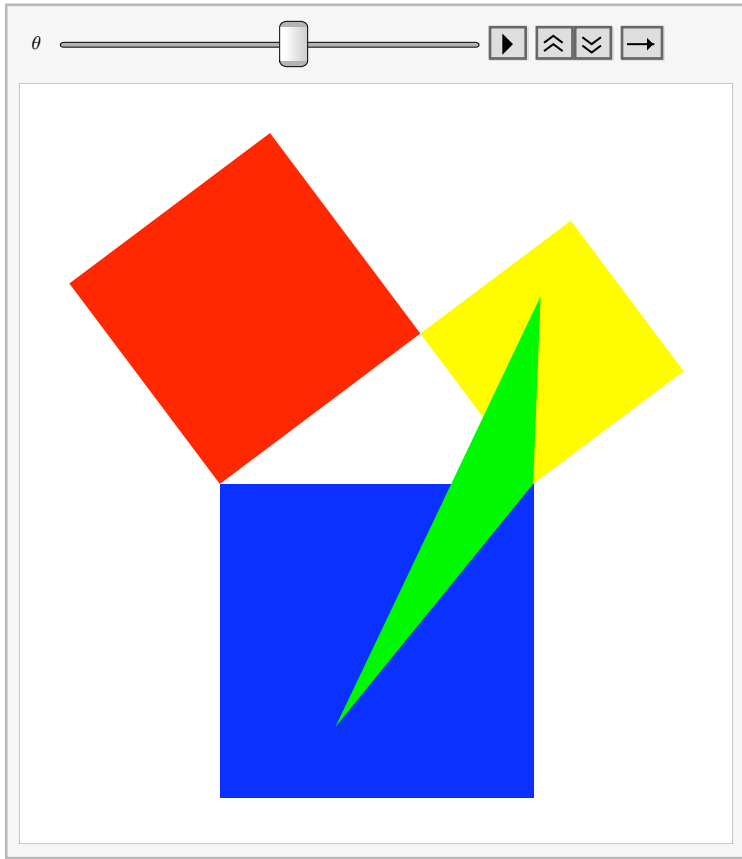


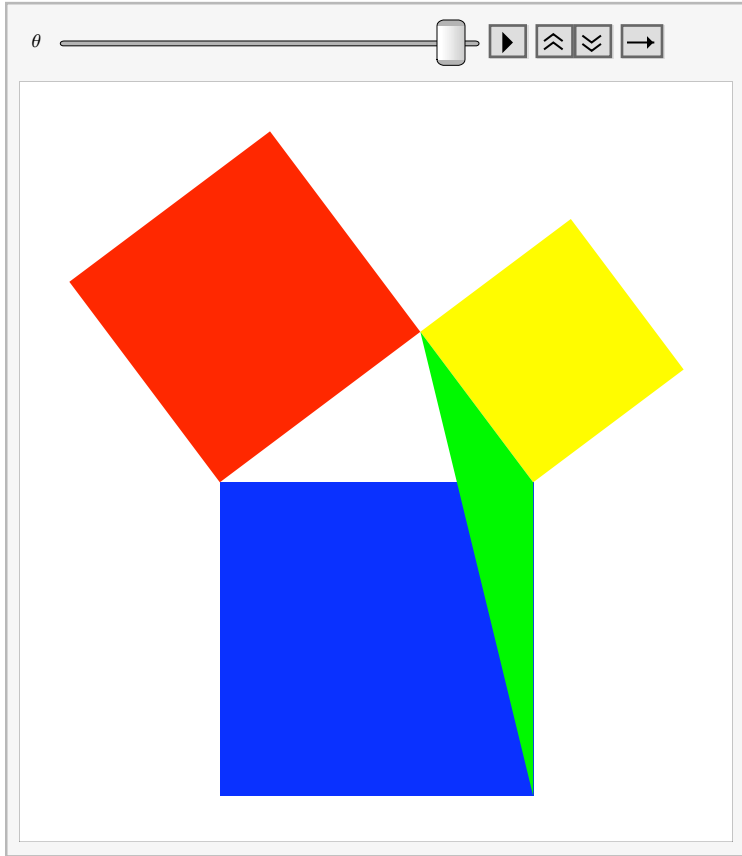
Shear the green triangle until one side lies along the top of the blue square



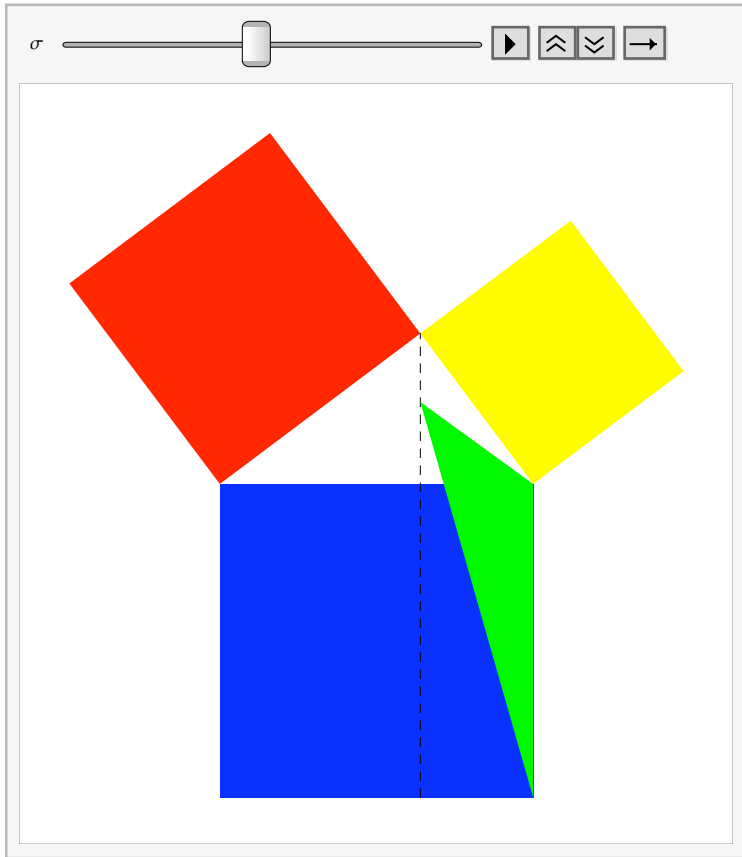


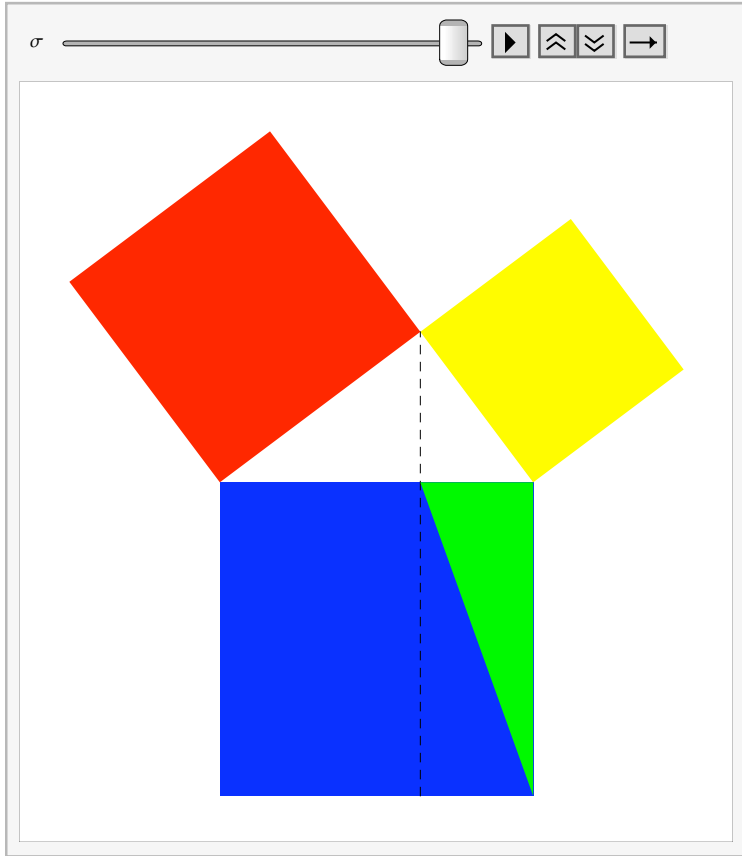
- Rotate the green triangle until the blue length side is vertical



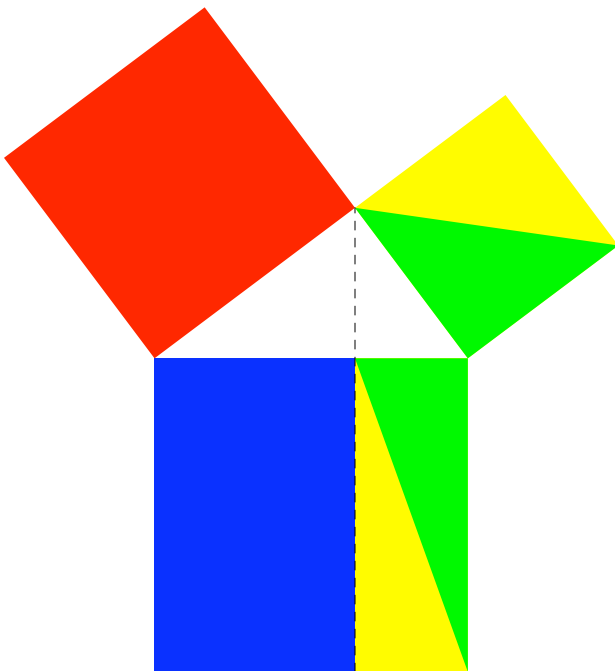


- Shear vertically until the short side is horizontal



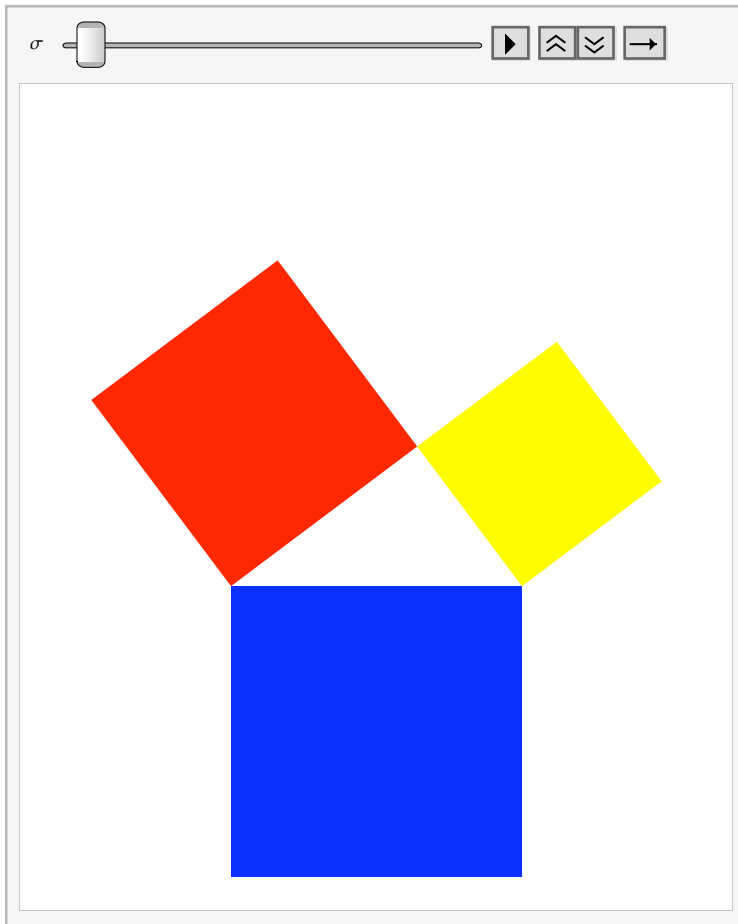


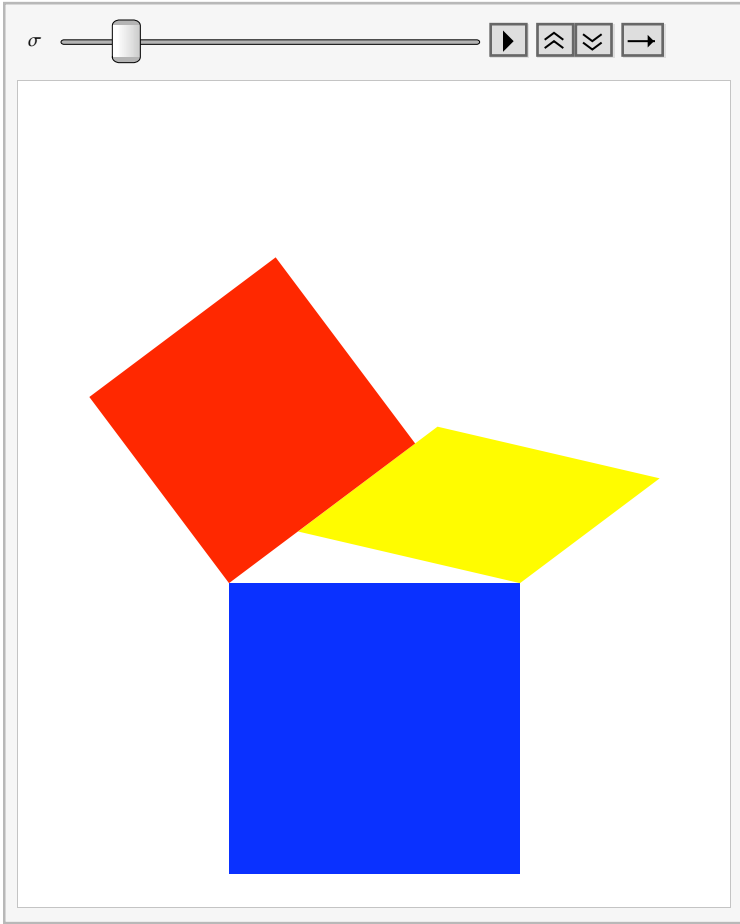
- Half done: the two green triangles have the same area (repeat for the red square)

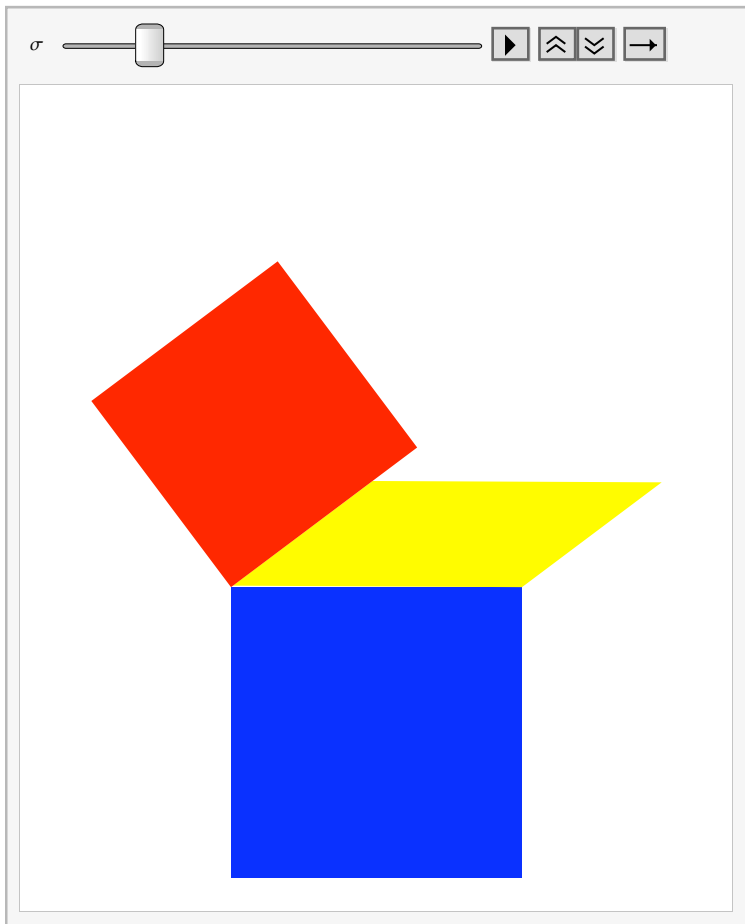


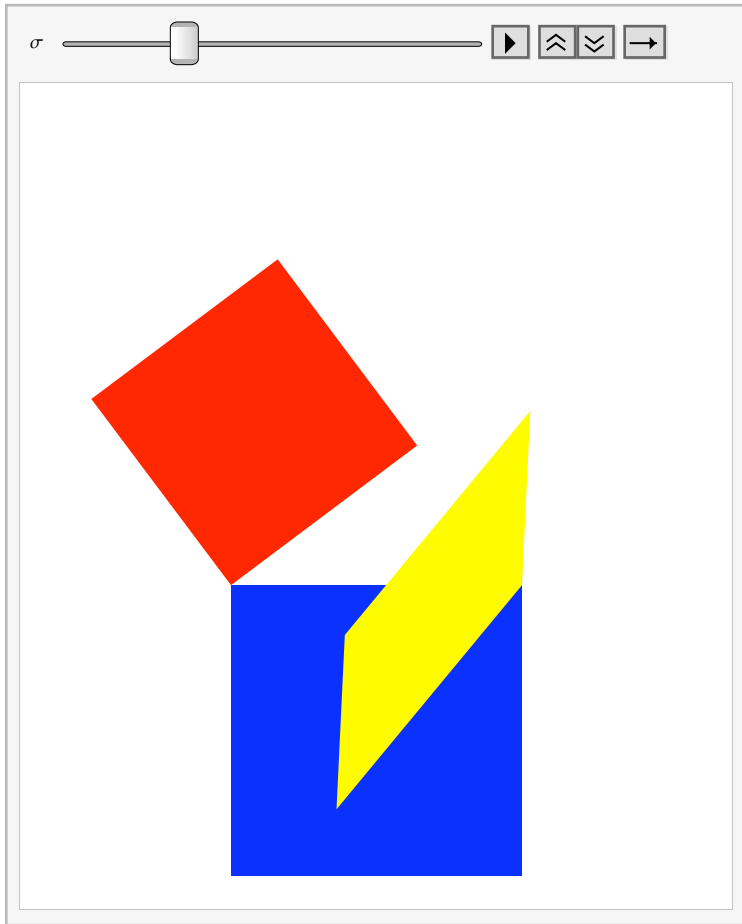
A slightly different approach:

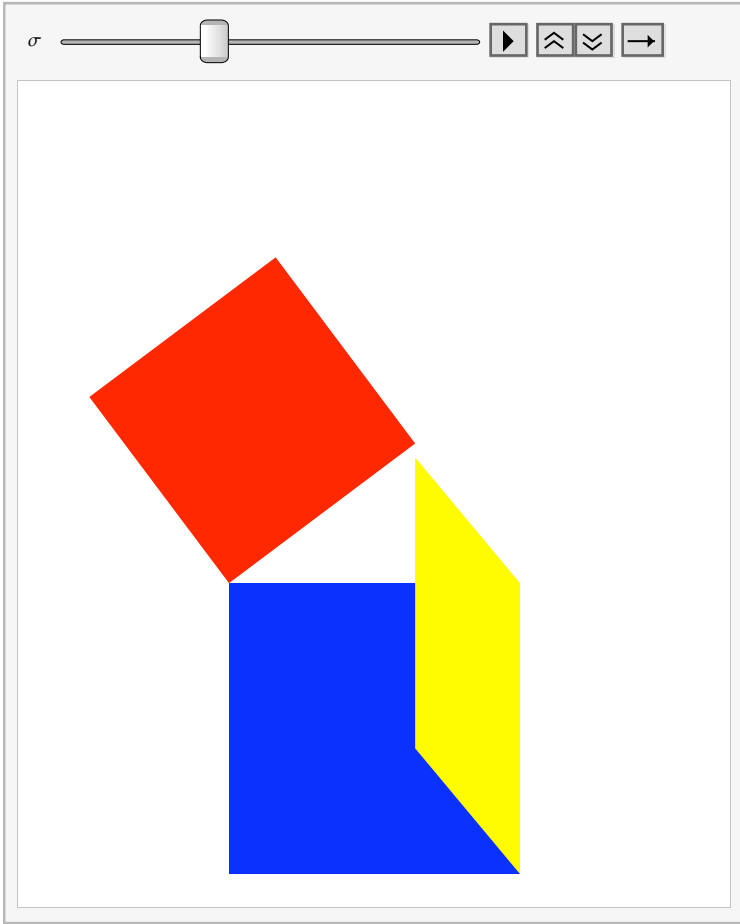
The first part implements Euclid's transformations, but on the entire yellow square; the red square is transformed using two families of shears followed by a translation. What would the corresponding transformation of the yellow square look like?

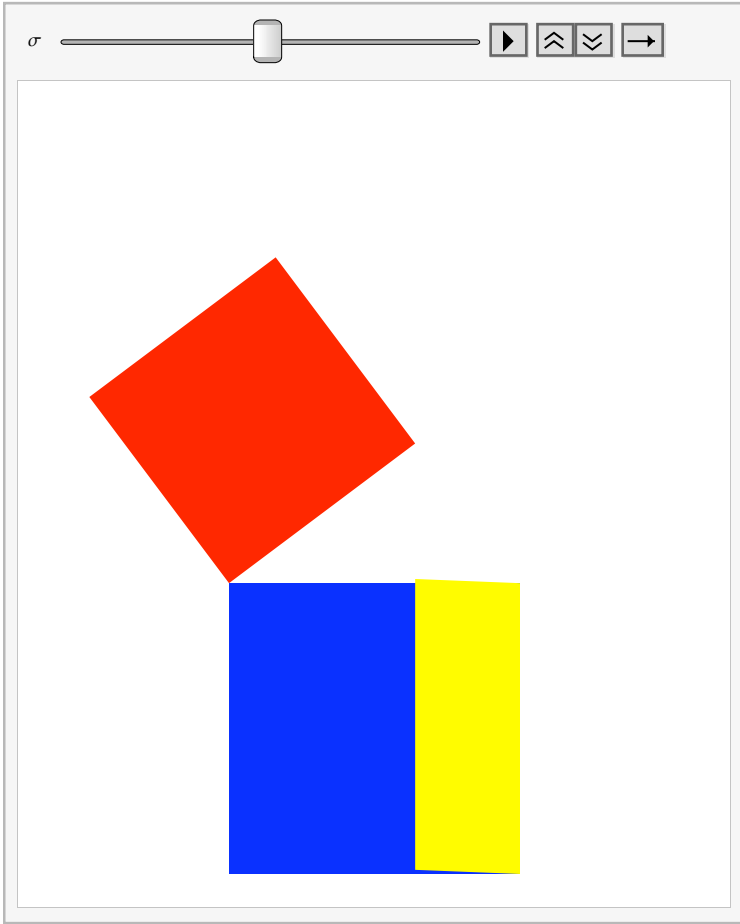


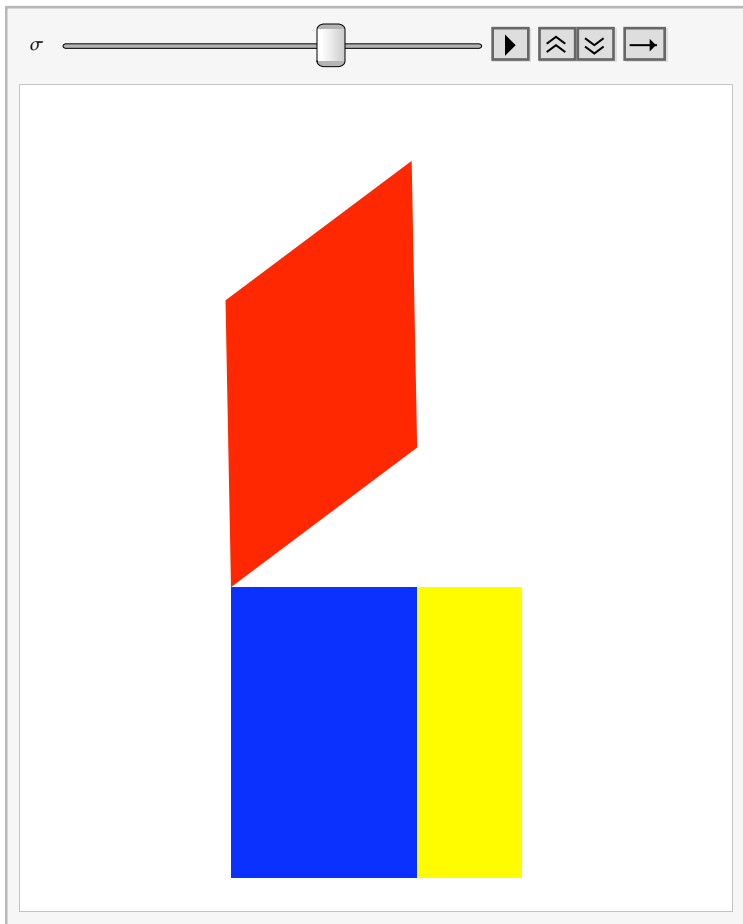


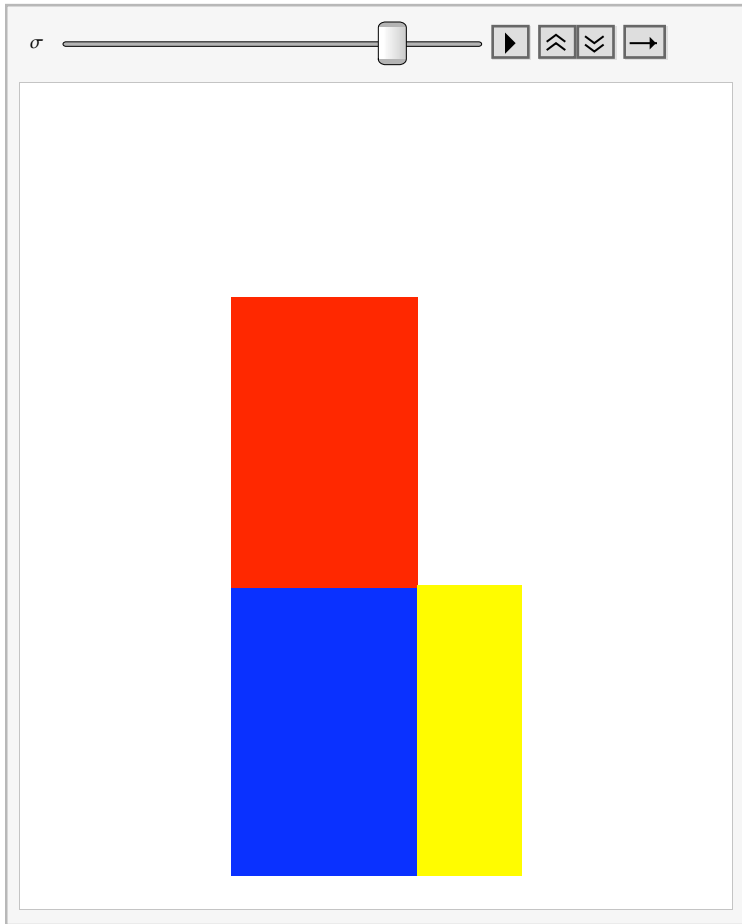


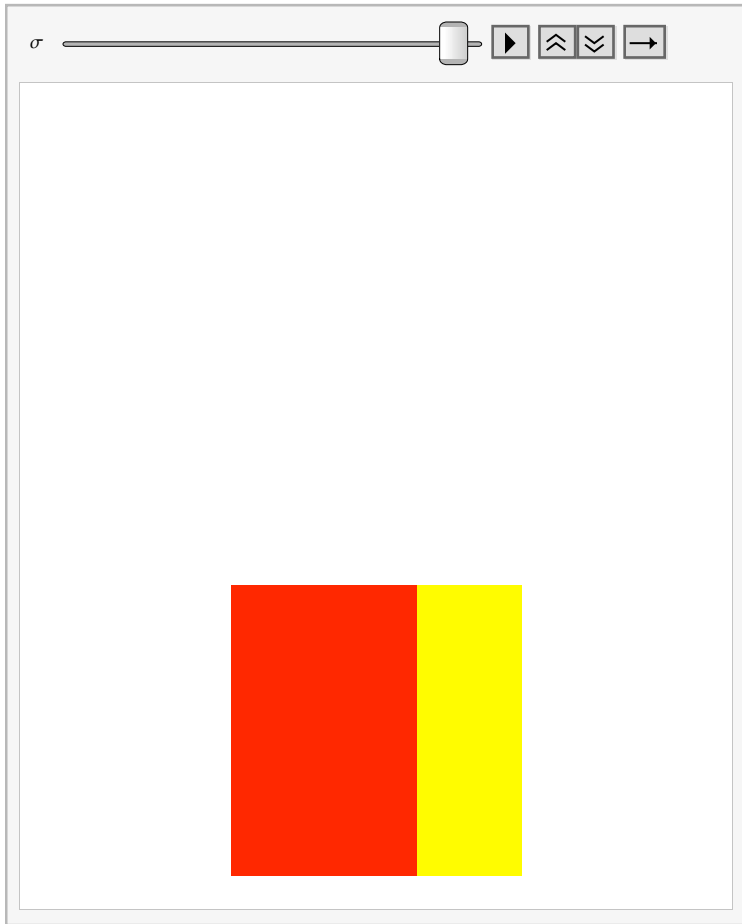












■ Code