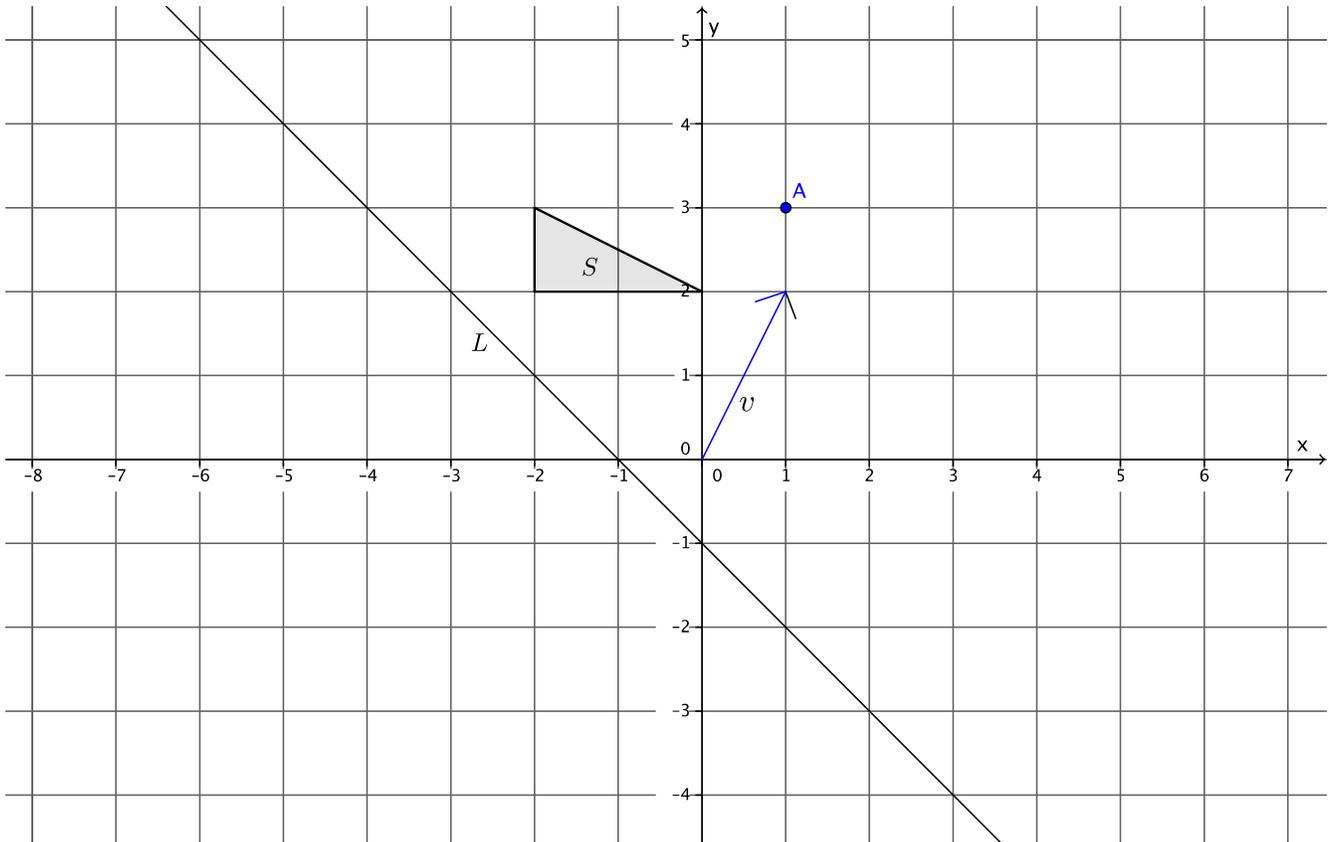


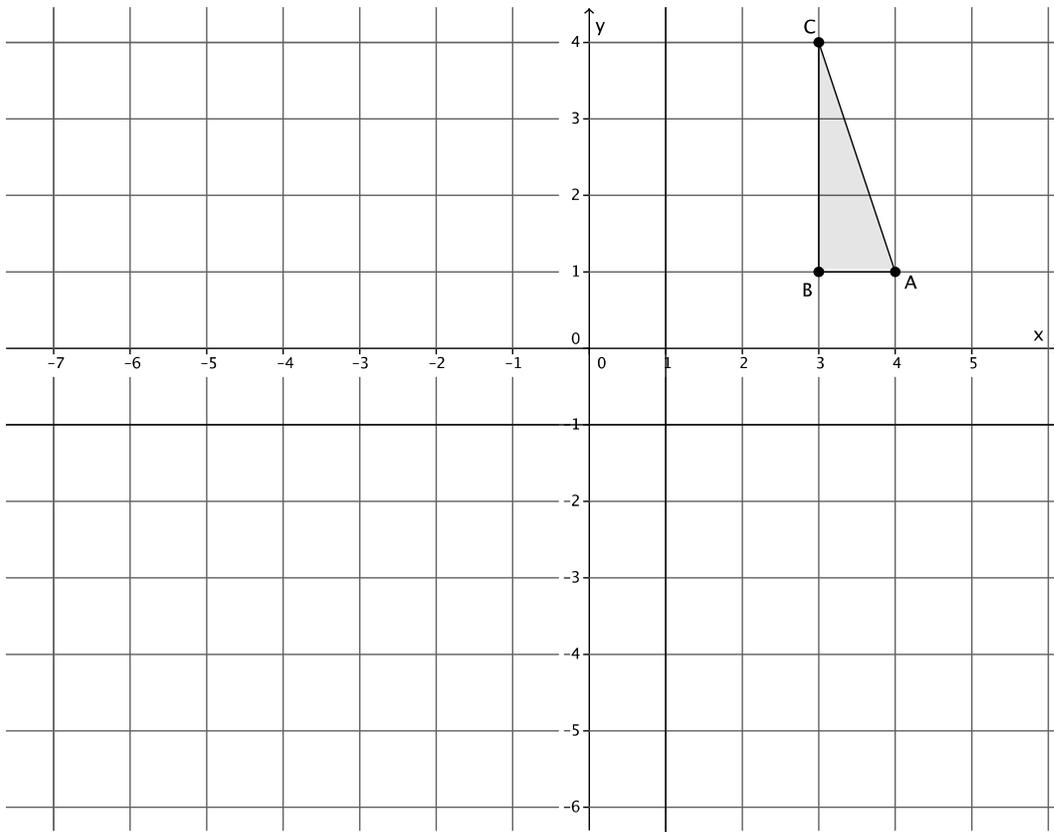
**Problem Set**

- Let there be the translation along vector  $\vec{v}$ , let there be the rotation around point  $A$ ,  $-90$  degrees (clockwise), and let there be the reflection across line  $L$ . Let  $S$  be the figure as shown below. Show the location of  $S$  after performing the following sequence: a translation followed by a rotation followed by a reflection.



- Would the location of the image of  $S$  in the previous problem be the same if the translation was performed last instead of first; that is, does the sequence, translation followed by a rotation followed by a reflection, equal a rotation followed by a reflection followed by a translation? Explain.

3. Use the same coordinate grid to complete parts (a)–(c).



- Reflect triangle  $ABC$  across the vertical line, parallel to the  $y$ -axis, going through point  $(1, 0)$ . Label the transformed points  $A, B, C$  as  $A', B', C'$ , respectively.
- Reflect triangle  $A'B'C'$  across the horizontal line, parallel to the  $x$ -axis going through point  $(0, -1)$ . Label the transformed points of  $A', B', C'$  as  $A'', B'', C''$ , respectively.
- Is there a single rigid motion that would map triangle  $ABC$  to triangle  $A''B''C''$ ?