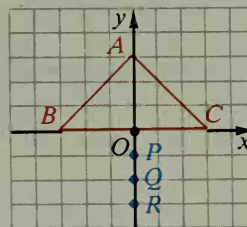


Self-Test 2

For Exercises 1–6, refer to the figure.

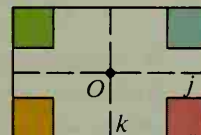


1. $R_x \circ \mathcal{R}_{O, 90}: B \rightarrow \underline{\hspace{1cm}}$
2. $R_x \circ H_O: A \rightarrow \underline{\hspace{1cm}}$
3. $\mathcal{R}_{O, 110} \circ \mathcal{R}_{O, 70}: C \rightarrow \underline{\hspace{1cm}}$
4. $D_{O, \frac{1}{2}} \circ D_{R, \frac{1}{2}}: P \rightarrow \underline{\hspace{1cm}}$
5. What is the symmetry line of $\triangle ABC$?
6. Does $\triangle ABC$ have point symmetry?
7. For any transformation T , $T^{-1} \circ T: P \rightarrow \underline{\hspace{1cm}}$.
8. The composite of any transformation T and the identity is $\underline{\hspace{1cm}}$.
9. If line a is parallel to line b , then the composite $R_a \circ R_b$ is a $\underline{\hspace{1cm}}$.
10. Give the inverse of each transformation.
 - a. $D_{O, 5}$
 - b. $\mathcal{R}_{O, -70}$
 - c. R_y
 - d. $S: (x, y) \rightarrow (x + 2, y - 3)$
11. How many lines of symmetry does a regular hexagon have?

Extra

Symmetry Groups

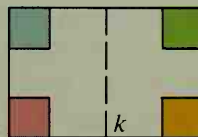
Cut out a cardboard or paper rectangle and color each corner with a color of its own on both front and back. Also on the front and back draw symmetry lines j and k and label symmetry point O . The rectangle has four symmetries: I , R_j , R_k , and H_O . The effect of each of these on the original rectangle is shown below.



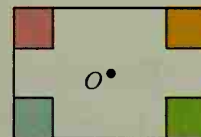
Effect of I :
Rectangle unchanged



Effect of R_j



Effect of R_k



Effect of H_O

Our goal is to see how the four symmetries of the rectangle combine with each other. For example, if the original rectangle is mapped first by R_j and then by H_O , the images look like this:

