Classroom Exercises

Complete the following. Assume points D, C, U, W, X, **and** Y **are obtained by reflection in line** k **or** j.
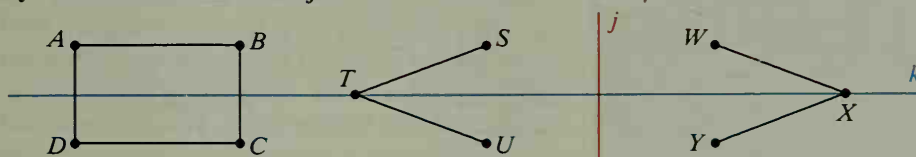
1. R_k stands for __?__.
2. $R_k : A \rightarrow$ __?__
3. $R_k(B) =$ __?__
4. $R_k : \overline{AB} \rightarrow$ __?__
5. $R_k(C) =$ __?__
6. $R_k : T \rightarrow$ __?__
7. $R_k : \overline{BC} \rightarrow$ __?__
8. $R_k : \angle STU \rightarrow$ __?__
9. $R_j(S) =$ __?__
10. $R_j : \overline{ST} \rightarrow$ __?__
11. $R_j(\underline{\;?\;}) = \overline{XY}$
12. $R_j :$ line $k \rightarrow$ __?__

Points A–D **are reflected in the** x**-axis. Points** E–H **are reflected in the** y**-axis. State the coordinates of the images.**

13.

14.
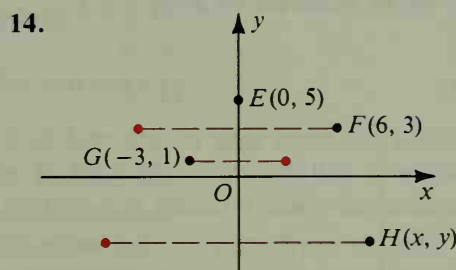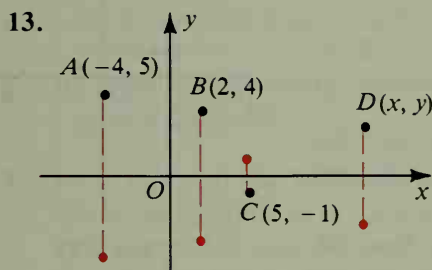
Sketch each figure on the chalkboard. With a different color, sketch its image, using the dashed line as the line of reflection.

15.

16.

17.

18.
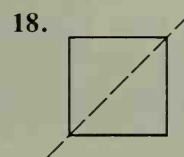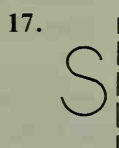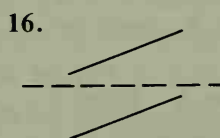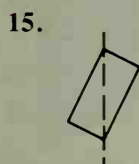
19. Under a reflection, is an angle always mapped to a congruent angle? Is a polygon always mapped to a polygon with the same area? Explain.

20. Explain in your own words the meaning of each phrase.
    a. An isometry preserves distance.
    b. Area is invariant under a reflection.
    c. Orientation is not invariant under a reflection.