

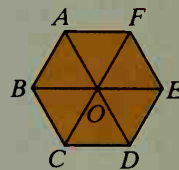
Written Exercises

State another name for each rotation.

- A** 1. $\mathcal{R}_{O, 80}$ 2. $\mathcal{R}_{O, -15}$ 3. $\mathcal{R}_{A, 450}$ 4. $\mathcal{R}_{B, -720}$ 5. H_O

The diagonals of regular hexagon $ABCDEF$ form six equilateral triangles as shown. Complete each statement below.

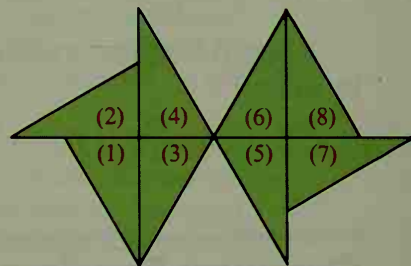
6. $\mathcal{R}_{O, 60}: E \rightarrow \underline{\hspace{1cm}}$ 7. $\mathcal{R}_{O, -60}: D \rightarrow \underline{\hspace{1cm}}$
 8. $\mathcal{R}_{O, 120}: F \rightarrow \underline{\hspace{1cm}}$ 9. $\mathcal{R}_{D, 60}: \underline{\hspace{1cm}} \rightarrow O$
 10. $\mathcal{R}_{B, -60}(O) = \underline{\hspace{1cm}}$ 11. $H_O(A) = \underline{\hspace{1cm}}$
 12. A reflection in \overleftrightarrow{FC} maps B to $\underline{\hspace{1cm}}$ and D to $\underline{\hspace{1cm}}$.
 13. If k is the perpendicular bisector of \overline{FE} , then $\mathcal{R}_k(A) = \underline{\hspace{1cm}}$.
 14. If a translation maps A to B , then it also maps O to $\underline{\hspace{1cm}}$ and E to $\underline{\hspace{1cm}}$.



Exs. 6-14

State whether the specified triangle is mapped to the other triangle by a reflection, translation, rotation, or half-turn.

15. $\triangle(1)$ to $\triangle(2)$ 16. $\triangle(1)$ to $\triangle(3)$
 17. $\triangle(1)$ to $\triangle(4)$ 18. $\triangle(1)$ to $\triangle(5)$
 19. $\triangle(2)$ to $\triangle(4)$ 20. $\triangle(2)$ to $\triangle(7)$
 21. $\triangle(4)$ to $\triangle(6)$ 22. $\triangle(4)$ to $\triangle(8)$

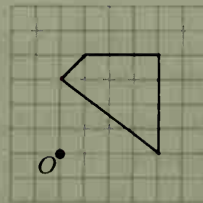
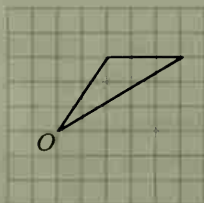
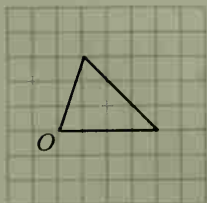


Exs. 15-24

- B** 23. In the diagram at the right there is a glide reflection that maps triangle (1) to triangle ($\underline{\hspace{1cm}}$).
 24. Name another pair of triangles for which one triangle is mapped to another by a glide reflection.
 25. Which of the following properties are invariant under a half-turn?
 a. distance b. angle measure c. area d. orientation
 26. Which of the properties listed in Exercise 25 are invariant under the rotation $\mathcal{R}_{O, 90}$?

Copy the figure on graph paper. Draw the image by the specified rotation.

27. $\mathcal{R}_{O, 90}$ 28. $\mathcal{R}_{O, -90}$ 29. H_O



30. If $H_C: (1, 1) \rightarrow (7, 3)$, find the coordinates of C .