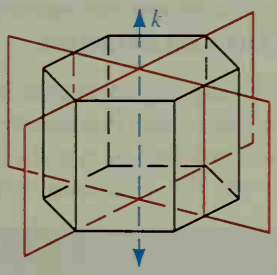
Some geometric solids have more than one symmetry plane. For example, the regular hexagonal prism shown has seven symmetry planes, two of which are shown. It also has six-fold rotational symmetry because rotating it 60°, 120°, 180°, 240°, 300°, or 360° about the line k (called the *axis of symmetry*) maps the prism onto itself.

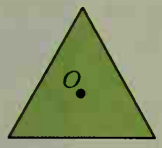


Classroom Exercises

Tell how many symmetry lines each figure has. In Exercise 2, O is the center of the equilateral triangle.

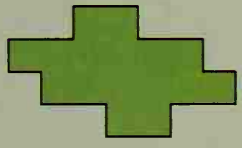
1.

2.



3.

4.



5. Which figures above have point symmetry?

6. Describe all of the rotational symmetries of the figure in Exercise 2.

7. Describe all of the rotational symmetries of the figure in Exercise 3.

Draw each figure on the chalkboard and describe all of its symmetries.

8. isosceles triangle

9. parallelogram

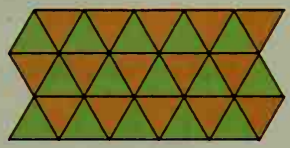
10. rectangle

11. rhombus

12. Imagine that the pattern shown fills the entire plane. Does the pattern have the symmetry named?

a. translational symmetry **b.** line symmetry

c. point symmetry **d.** rotational symmetry



13. How many planes of symmetry does the given solid have?

a. a rectangular solid **b.** a sphere **c.** a regular square pyramid