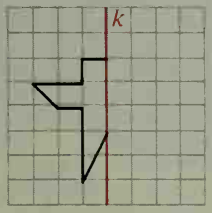
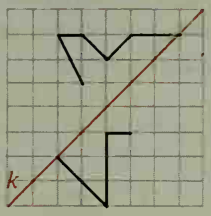
Copy the figure shown. Then complete the figure so that it has the specified symmetries.

12.



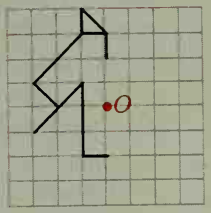
symmetry in line k

13.



symmetry in line k

14.



symmetry in point O

Copy the figure shown. Then complete the figure so that it has the specified symmetries.

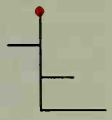
B **15.**

60°, 120°, and 180° rotational symmetry

16.

90°, 180°, and 270° rotational symmetry

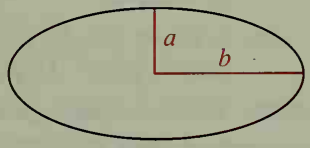
17.

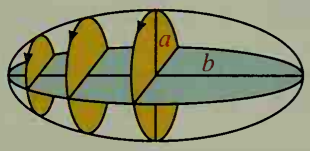


2 symmetry lines and 1 symmetry point

18. **a.** An octopus has one symmetry. Describe it.
b. If you disregard the eyes and mouth of an octopus, it has many symmetries. Describe them.

19. **a.** Describe the symmetries of the ellipse shown.
b. If the ellipse is rotated in space about one of its symmetry lines, an ellipsoid (an egg-like figure) is formed. Its volume is $V = \frac{4}{3}\pi a^2 b$. Interpret this formula when $a = b$.
c. Describe the symmetries of an ellipsoid.





20. Tell whether a tessellation can be made with the given figure.
a. A regular hexagon
b. A scalene triangle
c. A regular pentagon
d. A nonisosceles trapezoid

In Exercises 21–23 draw the figure if there is one that meets the conditions. Otherwise write *not possible*.

21. A trapezoid with **(a)** no symmetry, **(b)** one symmetry line, **(c)** a symmetry point.

22. A parallelogram with **(a)** four symmetry lines, **(b)** just two symmetry lines, **(c)** just one symmetry line.

23. An octagon with **(a)** eight rotational symmetries, **(b)** just four rotational symmetries, **(c)** only point symmetry.