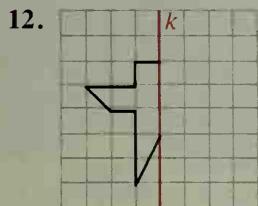
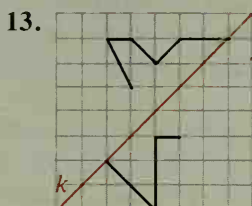


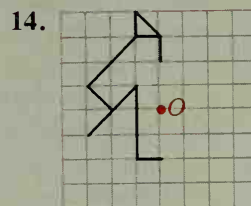
Copy the figure shown. Then complete the figure so that it has the specified symmetries.



symmetry in line k

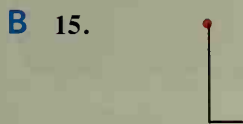


symmetry in line k



symmetry in point O

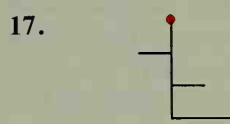
Copy the figure shown. Then complete the figure so that it has the specified symmetries.



60° , 120° , and 180°
rotational symmetry



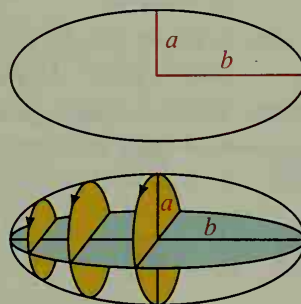
90° , 180° , and 270°
rotational symmetry



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.