Written Exercises

Exercises 1–4 deal with figures in a plane. Draw a diagram showing the locus. Then write a description of the locus.

A

1. Given two points A and B, what is the locus of points equidistant from A and B?
2. Given a point P, what is the locus of points 2 cm from P?
3. Given a line h, what is the locus of points 2 cm from h?
4. Given $\odot O$, what is the locus of the midpoints of all radii of $\odot O$?

In Exercises 5–8 begin each exercise with a square $ABCD$ that has sides 4 cm long. Draw a diagram showing the locus of points on or inside the square that satisfy the given conditions. Then write a description of the locus.

5. Equidistant from $\overline{AB}$ and $\overline{CD}$
6. Equidistant from points B and D
7. Equidistant from $\overline{AB}$ and $\overline{BC}$
8. Equidistant from all four sides

Exercises 9–12 deal with figures in space.

9. Given two parallel planes, what is the locus of points equidistant from the two planes?
10. Given a plane, what is the locus of points 5 cm from the plane?
11. Given point E, what is the locus of points 3 cm from E?
12. Given points C and D, what is the locus of points equidistant from C and D?

Exercises 13–17 deal with figures in a plane. (*Note*: If a point in a segment or in an arc is not included in the locus, indicate the point by an open dot.)

B

13. **a.** Draw an angle HEX. Construct the locus of points equidistant from the sides of $\angle HEX$.
    b. Draw two intersecting lines j and k. Construct the locus of points equidistant from j and k.
14. Draw a segment $\overline{DE}$ and a line n. Construct the locus of points whose distance from n is DE.
15. Draw a segment $\overline{AB}$. Construct the locus of points P such that $\angle APB$ is a right angle.
16. Draw a segment $\overline{CD}$. Construct the locus of points Q such that $\triangle CQD$ is isosceles with base $\overline{CD}$.
17. Draw a segment $\overline{EF}$. Construct the locus of points G such that $\triangle EFG$ is isosceles with leg $\overline{EF}$.