Exercises 3 and 4 refer to plane figures.

3. Consider the following problem: Given two points D and E, what is the locus of points 1 cm from D and 2 cm from E?
   a. The locus of points 1 cm from D is __?__.
   b. The locus of points 2 cm from E is __?__.
   c. Draw diagrams to show three possibilities with regard to points that satisfy both conditions (a) and (b).
   d. Give a one-sentence solution to the problem.

4. Consider the following problem: Given a point A and a line k, what is the locus of points 3 cm from A and 1 cm from k?
   a. The locus of points 3 cm from A is __?__.
   b. The locus of points 1 cm from k is __?__.
   c. Draw diagrams to show five possibilities with regard to points that satisfy both conditions (a) and (b).
   d. Give a one-sentence solution to the problem.

Exercises 5–10 refer to plane figures. Draw a diagram of the locus. Then write a description of the locus.

5. Point P lies on line l. What is the locus of points on l and 3 cm from P?

6. Point Q lies on line l. What is the locus of points 5 cm from Q and 3 cm from l?

7. Points A and B are 3 cm apart. What is the locus of points 2 cm from both A and B?

8. Lines j and k intersect in point P. What is the locus of points equidistant from j and k, and 2 cm from P?

9. Given $\angle A$, what is the locus of points equidistant from the sides of $\angle A$ and 2 cm from vertex A?

10. Given $\triangle RST$, what is the locus of points equidistant from $\overline{RS}$ and $\overline{RT}$ and also equidistant from R and S?

In Exercises 11–14 draw diagrams to show the possibilities with regard to points in a plane.

B 11. Given points C and D, what is the locus of points 2 cm from C and 3 cm from D?

12. Given point E and line k, what is the locus of points 3 cm from E and 2 cm from k?

13. Given a point A and two parallel lines j and k, what is the locus of points 30 cm from A and equidistant from j and k?

14. Given four points P, Q, R, and S, what is the locus of points that are equidistant from P and Q and equidistant from R and S?