

10.7

Locus

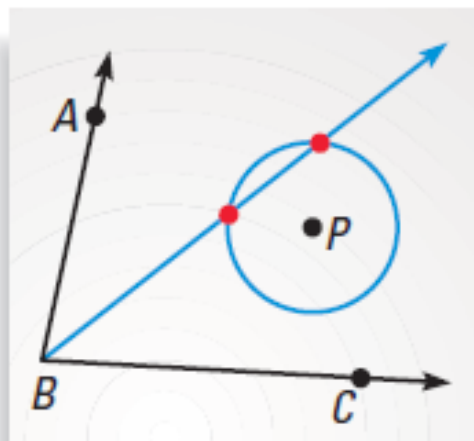
A **locus** in a plane is the set of all points in a plane that satisfy a given condition or a set of given conditions. The word *locus* is derived from the Latin word for “location.” The plural of locus is *loci*, pronounced “low-sigh.”

A locus is often described as the path of an object moving in a plane. For instance, the reason that many clock faces are circular is that the locus of the end of a clock’s minute hand is a circle.

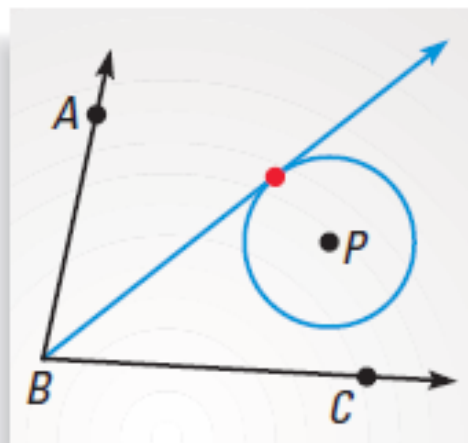


To find the locus of points that satisfy a given condition, use the following steps.

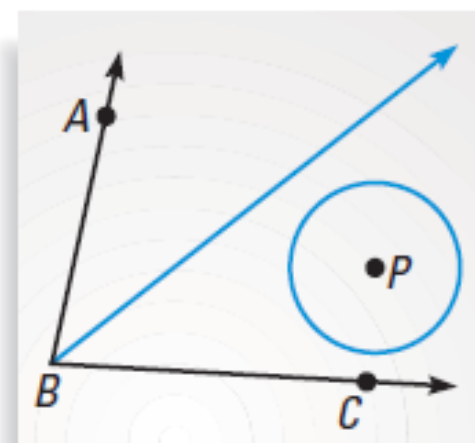
- 1 Draw any figures that are given in the statement of the problem.
- 2 Locate several points that satisfy the given condition.
- 3 Continue drawing points until you can recognize the pattern.
- 4 Draw the locus and describe it in words.




The locus is 2 points.




The locus is 1 point.



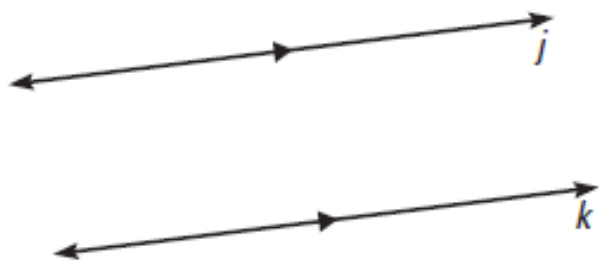
The locus is 0 points.

 **LOGICAL REASONING** Draw the figure. Then sketch and describe the locus of points on the paper that satisfy the given condition.

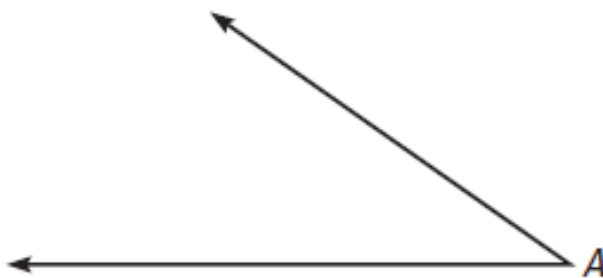
- 9. Point P , the locus of points that are 1 inch from P
- 10. Line k , the locus of points that are 1 inch from k
- 11. Point C , the locus of points that are no more than 1 inch from C
- 12. Line j , the locus of points that are at least 1 inch from j

 **LOGICAL REASONING** Copy the figure. Then sketch and describe the locus of points on the paper that satisfy the given condition(s).

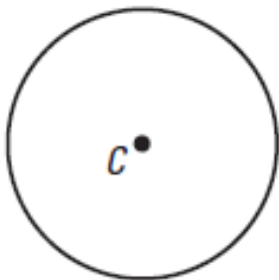
13. equidistant from j and k



14. in the interior of $\angle A$ and equidistant from both sides of $\angle A$



15. midpoint of a radius of $\odot C$



16. equidistant from r and s

