

# Definitions and Postulates

## Objectives

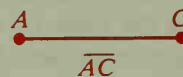
1. Use symbols for lines, segments, rays, and distances; find distances.
2. Name angles and find their measures.
3. State and use the Segment Addition Postulate and the Angle Addition Postulate.
4. Recognize what you can conclude from a diagram.
5. Use postulates and theorems relating points, lines, and planes.

## 1-3 Segments, Rays, and Distance

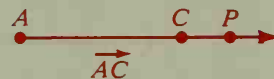
In the diagram, point  $B$  is *between* points  $A$  and  $C$ . Note that  $B$  must lie on  $\overleftrightarrow{AC}$ .



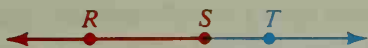
**Segment  $AC$** , denoted  $\overline{AC}$ , consists of points  $A$  and  $C$  and all points that are between  $A$  and  $C$ . Points  $A$  and  $C$  are called the *endpoints* of  $\overline{AC}$ .



**Ray  $AC$** , denoted  $\overrightarrow{AC}$ , consists of  $\overline{AC}$  and all other points  $P$  such that  $C$  is between  $A$  and  $P$ . The *endpoint* of  $\overrightarrow{AC}$  is  $A$ , the point named first.



$\overrightarrow{SR}$  and  $\overrightarrow{ST}$  are called **opposite rays** if  $S$  is between  $R$  and  $T$ .



The hands of the clock shown suggest opposite rays.

On a *number line* every point is paired with a number and every number is paired with a point. In the diagram, point  $J$  is paired with  $-3$ , the *coordinate* of  $J$ .



The **length** of  $\overline{MJ}$ , denoted by  $MJ$ , is the distance between point  $M$  and point  $J$ . You can find the length of a segment on a number line by subtracting the coordinates of its endpoints:

$$MJ = 4 - (-3) = 7$$