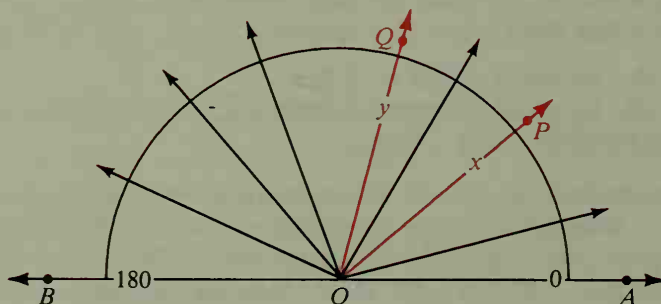


The two angle postulates below are very much like the Ruler Postulate and the Segment Addition Postulate on page 12.

### Postulate 3 Protractor Postulate

On  $\overleftrightarrow{AB}$  in a given plane, choose any point  $O$  between  $A$  and  $B$ . Consider  $\overrightarrow{OA}$  and  $\overrightarrow{OB}$  and all the rays that can be drawn from  $O$  on one side of  $\overleftrightarrow{AB}$ . These rays can be paired with the real numbers from 0 to 180 in such a way that:

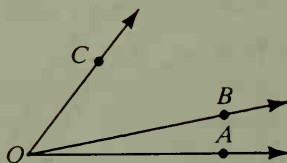
- $\overrightarrow{OA}$  is paired with 0, and  $\overrightarrow{OB}$  with 180.
- If  $\overrightarrow{OP}$  is paired with  $x$ , and  $\overrightarrow{OQ}$  with  $y$ , then  $m\angle POQ = |x - y|$ .



### Postulate 4 Angle Addition Postulate

If point  $B$  lies in the interior of  $\angle AOC$ , then

$$m\angle AOB + m\angle BOC = m\angle AOC.$$



If  $\angle AOC$  is a straight angle and  $B$  is any point not on  $\overleftrightarrow{AC}$ , then

$$m\angle AOB + m\angle BOC = 180.$$

