

## Section 1.4 Angles and Their Measures

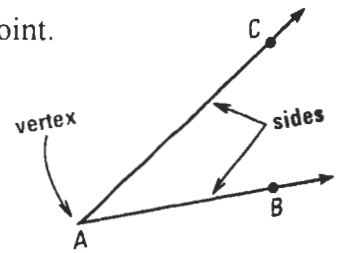
- An **angle** consists of two different rays that have the same initial point.  
The rays are the **sides**. The initial point is the **vertex** of the angle.

Symbol:  $\angle CAB$  or  $\angle A$  (the vertex)

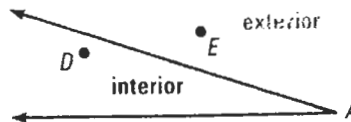
The *measure* of an angle is denoted by  $m\angle(\text{name})$ .

Angles that have the same measure are called **congruent angles**.

Symbol:  $\angle A \cong \angle B$



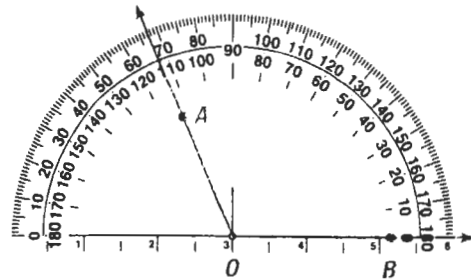
Interior of an angle:  
Exterior of an angle:



### ► Protractor Postulate

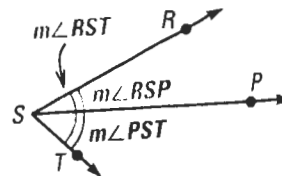
Consider a point  $A$  on one side of  $\overleftrightarrow{OB}$ . The rays of the form  $\overrightarrow{OA}$  can be matched one to one with the real numbers from 0 to 180.

The **measure** of  $\angle AOB$  is equal to the absolute value of the difference between the real numbers for  $\overrightarrow{OA}$  and  $\overrightarrow{OB}$ .



### ► Angle Addition Postulate

If  $P$  is in the interior of  $\angle RST$ , then  
 $m\angle RSP + m\angle PST = m\angle RST$



### ► Classifying Angles.

**Acute Angle:** An angle whose measure is between  $0^\circ$  and  $90^\circ$ .

**Right Angle:** An angle whose measure is  $90^\circ$ .

**Obtuse Angle:** An angle whose measure is between  $90^\circ$  and  $180^\circ$ .

**Straight Angle:** An angle whose measure is  $180^\circ$ .

Two angles are **adjacent angles** if they share a common vertex and side, but have no common interior points.

Examples:

$$m\angle ABC = \underline{\hspace{1cm}}$$

