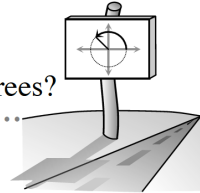


**1.3.1** Are angles always measured in degrees?

Radians as a Unit of Measure

**#103 What is a Radian** (a/b done with partner)

c. Count the number of radius lengths it takes to get all of the way around your circle. Did it come out to be an exact whole number? Compare the number of radius lengths you got with the number your team members got. Are their numbers consistent with yours? Why does this make sense?

d. Place your circular object on a sheet of paper and trace around it. Carefully mark the center ( $O$ ) of the circle on your paper. Place the circumference tape back on the circular object. Transfer the radius marks onto the traced circle. Label the position for the start of the tape as  $A$  and the first radius mark as  $B$ . Draw the segments  $OA$  and  $OB$ .

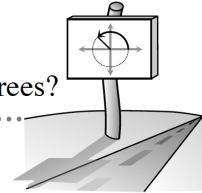
e. If you assume the radius of the circle you just drew is 1 unit, what is the length of  $\widehat{AB}$ ? (Note that  $\widehat{AB}$  is an arc, a part of the circumference of the circle, and not a segment.)

CW# \_\_\_\_\_

Name: \_\_\_\_\_

**1.3.1** Are angles always measured in degrees?

.....  
Radians as a Unit of Measure



**#104** Look again at the circle you traced on your paper. Let the radius of this circle equal 1 unit. (A circle with a radius of 1 unit is called a **unit circle**.) Answer the following in complete sentences.

a. What is the exact circumference of the circle?

b. How many *degrees* did you go around the circle in order to mark off  $2\pi$  radius lengths (radians) on your paper? Do not forget the units.

c. A radian is a unit of angle measure. A full circle has  $360^\circ$ . How many radians is this?

d. What whole number of radians best approximates the central angle of a full circle?