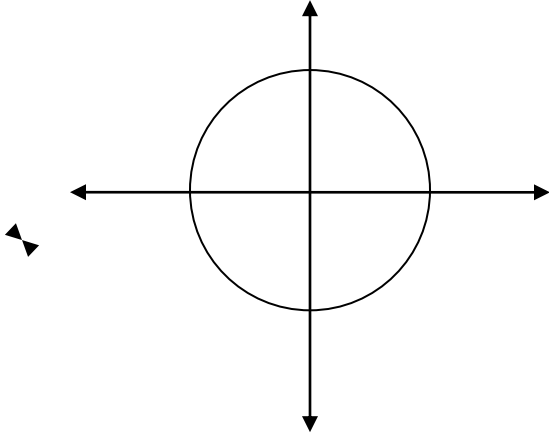


## ELABORATE - Radian Measure

### Degrees versus Radians

One radian is the measure of the central angle  $\theta$  that intercepts an arc  $s$  equal in length to the radius  $r$  of the circle.



The radian measure of one full revolution is  $360^\circ = 2\pi$  or  $180^\circ = \pi$

Converting between degrees and radians: You can convert from degrees to radians and back.

**Degrees to Radians:** Multiply the degree measure by  $\frac{\pi}{180}$

**Radians to Degrees:** Multiply the radian measure by  $\frac{180}{\pi}$

### **Examples:**

1. Convert the following angles from degree to radian measure in terms of  $\pi$ .

a.  $45^\circ$

b.  $135^\circ$

c.  $225^\circ$

d.  $315^\circ$

2. Convert the following angles from radian measure to degree.

a.  $\frac{\pi}{6}$

b.  $\frac{5\pi}{3}$

**EVALUATE HW**

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

**Radian and Degree Connections**

Give the degree measure of each:

1.  $\frac{\pi}{4}$

2.  $\frac{\pi}{6}$

3.  $\frac{2\pi}{3}$

4.  $\frac{3\pi}{4}$

5.  $\frac{11\pi}{4}$

Convert each degree measure to radians. Leave in terms of pi.

6.  $115^\circ$

7.  $155^\circ$

8.  $310^\circ$

9.  $75^\circ$

10.  $54^\circ$

11.  $180^\circ$