

### Example 4 Complementary and Supplementary

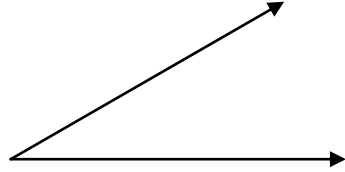
Complements add to  $90^\circ$  or  $\frac{\pi}{2}$

A]  $75^\circ$       B]  $\frac{\pi}{3}$

Supplements add to  $180^\circ$  or  $\pi$ .

Note: Complements and supplements can't be negative angles.

## Measuring Angles



What is a degree?

What is a radian?

### Example 3 Coterminal Angles

Find one positive and one negative coterminal angle for each given angle.

A]  $-513^\circ$

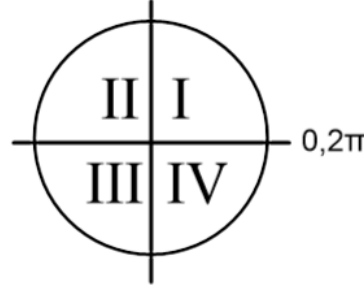
B]  $\frac{65\pi}{36}$

Angles in standard position with the same terminal side are coterminal.

**Degrees**  
Add or subtract multiples of  $360^\circ$  (one circle).  
 $\theta \pm 360k$

**Radians**  
Add or subtract multiples of  $2\pi$  (one circle).  
 $\theta \pm 2\pi k$

### Example 1 Quadrants and Quadrantal Angles



- Angles in standard position have their vertex at the center of a circle and their initial side along the positive x-axis.
- Angles are positive going counter-clockwise around the circle and negative going clockwise.
- Quadrantal angles have their terminal side along an axis.

Determine the quadrant in which the terminal side of each angle lies.

A]  $-300^\circ$

B]  $195^\circ$

C]  $\frac{2\pi}{3}$

D]  $-\frac{3\pi}{2}$

### Example 2 Converting radians and degrees

Radians  $\rightarrow$  Degrees  
Multiply by  $\frac{\pi}{180}$

Convert  $-3\frac{1}{2}\pi$  to degrees.

Degrees  $\rightarrow$  Radians  
Multiply by  $\frac{\pi}{180}$

Convert  $30^\circ$  to radians.