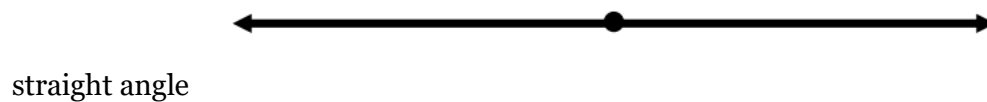
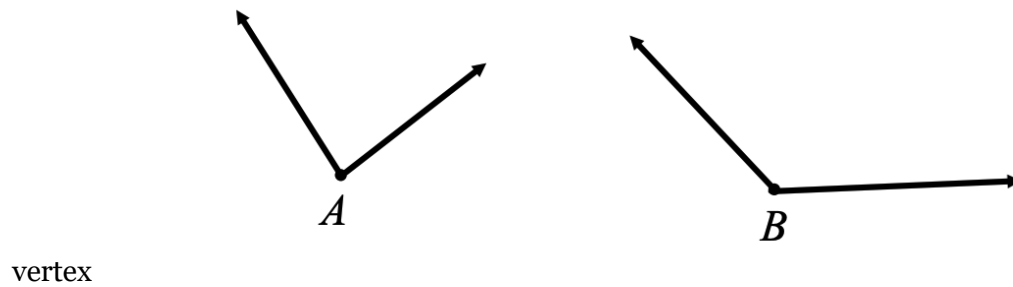
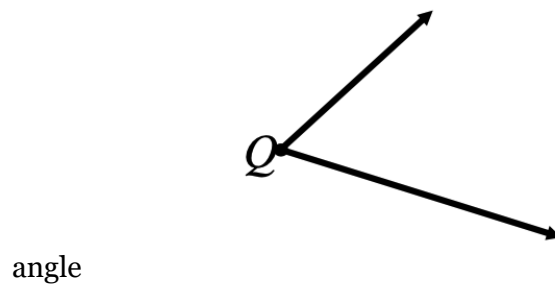
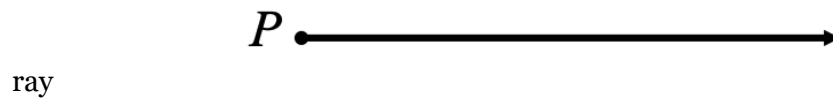


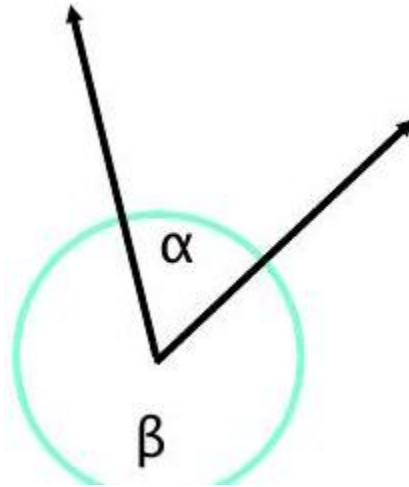
# Math 1060 ~ Trigonometry

## 1 Degree and Radian Measures of Angles

### Vocabulary for angles

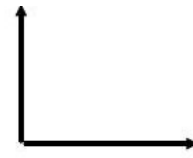


# Degree Measure of Angles and Types of Angles

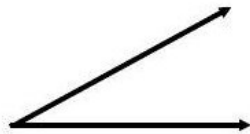


## EX 1

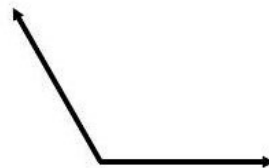
State the measure of each of these angles in degrees and describe the type of each.



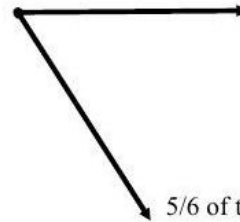
1/4 of the circle



1/12 of the circle

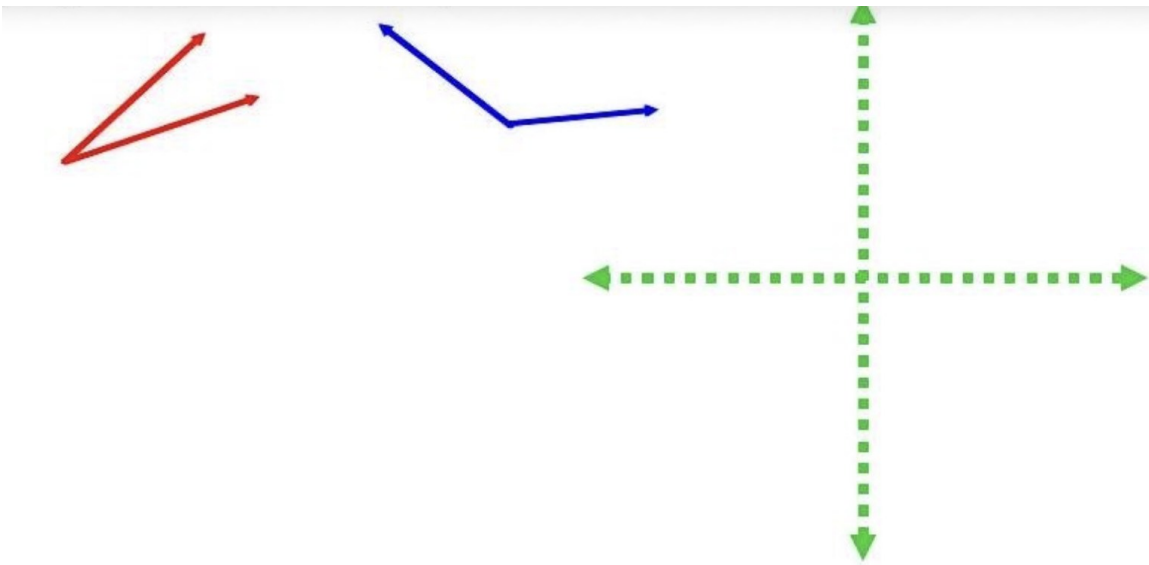


1/3 of the circle



5/6 of the circle

## Angles in Standard Position



standard position

initial side

terminal side

positive angle

negative angle

coterminal angles

## EX 2

State a coterminal angle between  $0^\circ$  and  $360^\circ$  for each of these.

**2a)**

$$\alpha = 432^\circ$$

**2b)**

$$\beta = -25^\circ$$

**2c)**

$$\gamma = 500^\circ$$

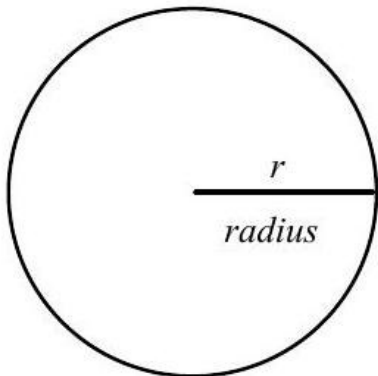
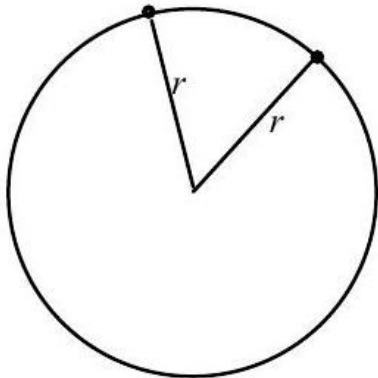
**2d)**

$$\theta = -630^\circ$$

## Radian Measure of an Angle

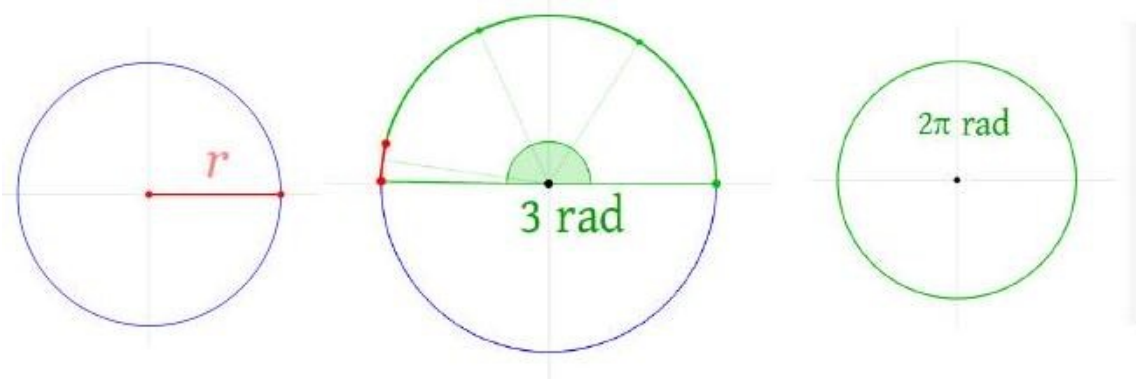
What is the number  $\pi$ ?

A radian is that portion of the circle equal in length to one radius of that circle.



$r =$   
 $s =$   
 $\theta =$

[https://en.wikipedia.org/wiki/File:Circle\\_radians.gif](https://en.wikipedia.org/wiki/File:Circle_radians.gif)



### EX 3

Graph each of these angles in standard position and classify them according to where their terminal side lies. State another coterminal angle between  $-2\pi$  and  $2\pi$  for each angle.

$\alpha = \frac{\pi}{3}$	$\beta = -\frac{5\pi}{6}$	$\lambda = \frac{\pi}{2}$	$\theta = \frac{9\pi}{4}$

# Converting Between Degrees and Radians

The conversion factor between degrees and radians is  $2\pi$  radians =  $360^\circ$ .

## EX 4

Convert the following measures.

**4a)**

$225^\circ$  to radians

**4b)**

$-\frac{5\pi}{6}$  radians to degrees

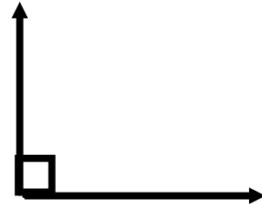
**4c)**

2 radians to degrees

**4d)**

$1080^\circ$  to radians

## Supplementary and Complementary Angles in Degrees



### EX 5

Determine the complement and supplement (if they exist) for each of these angles.

angle	complement	supplement
$\alpha = 24^\circ$		
$\beta = 90^\circ$		
$\gamma = 130^\circ$		
$\varphi = 180^\circ$		

## Supplementary and Complementary Angles in Radians



**EX 6**

Determine the complement and supplement (if they exist) for each of these angles.

angle	complement	supplement
$\alpha = \frac{\pi}{3}$		
$\beta = \frac{5\pi}{6}$		
$\gamma = \frac{\pi}{4}$		
$\varphi = \pi$		