Section 4.1

Degrees/Minutes/Seconds vs Decimal Degrees

1. Convert to DMS

37.425°

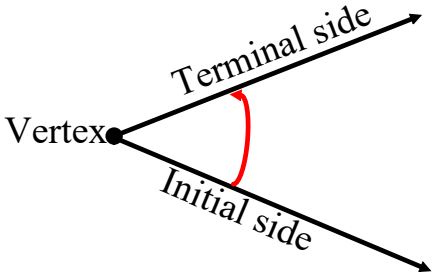
$.425^\circ \left(\frac{60'}{1^\circ} \right) =$

$.5' \left(\frac{60''}{1'} \right) =$

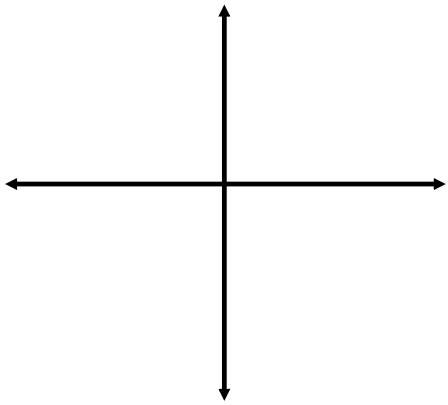
2. Convert to decimal degrees

$42^\circ 24' 36''$

$42^\circ + \left(\frac{24}{60} \right)^\circ + \left(\frac{36}{3600} \right)^\circ$



Standard position



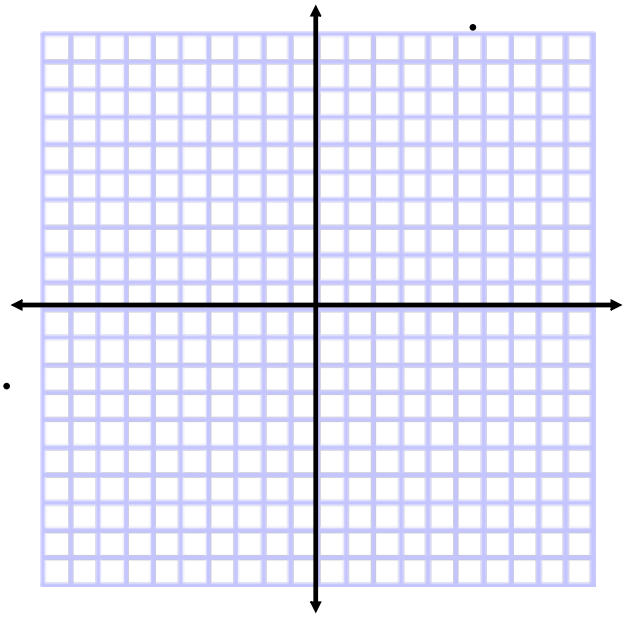
positive angle (counter clockwise)

negative angle (clockwise)

Graph the following angles in standard position.

60°
195°
270°
-240°

400°
-720°



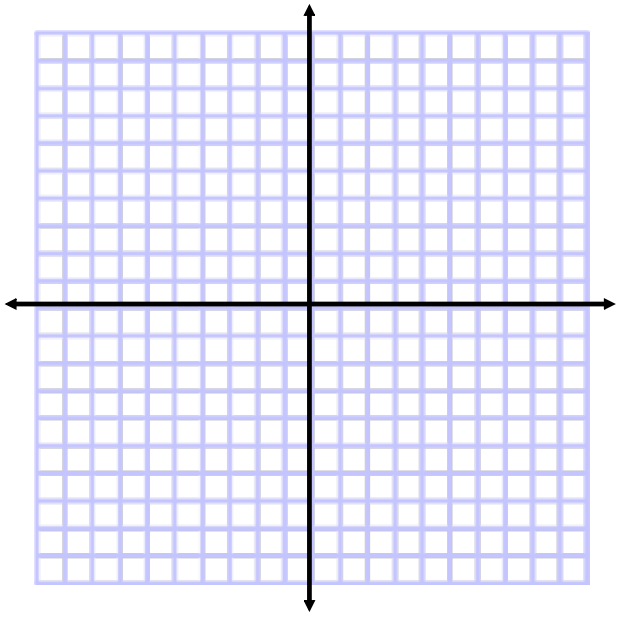
Find to 2 angles (1 positive and 1 negative) that are coterminal with the given angles.

-150°

75°

3π

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



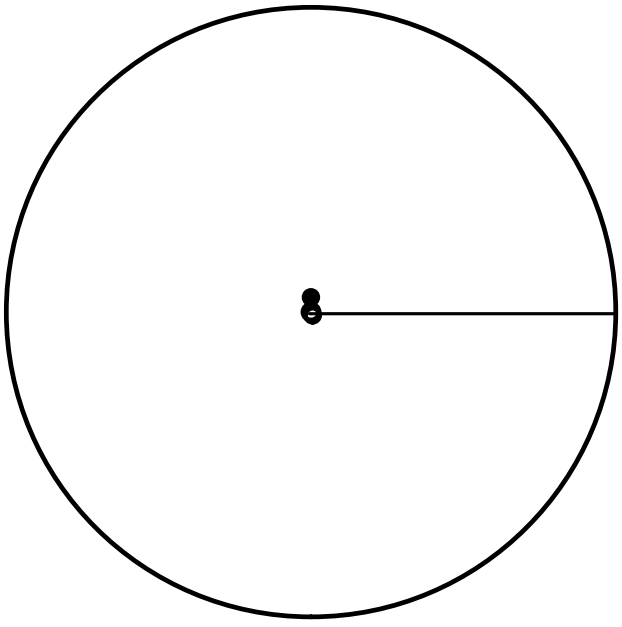
Complementary and Supplementary Angles

Find the complement of: $\frac{2\pi}{5}$ $\frac{4\pi}{5}$

Find the supplement of: $\frac{2\pi}{5}$ $\frac{4\pi}{5}$

What is a radian?

A central angle of a circle has measure 1 radian if it intercepts an arc with the same length as the radius.



Converting between radians and degrees

Key: $180^\circ = \pi$ radians

Convert to Radians	Convert to Degrees
150°	$\frac{3\pi}{4}$
$75^\circ 30'$	1.3

Arc Length Formula (Radian Measure)

$s = r\theta$

- s: arc length
- r: radius
- θ: central angle **has to be in radians**

Find the perimeter of a 60° slice of a large (7in. radius) pizza.

Area of a Sector of a Circle (Radian Measure)

radius

$A = \frac{1}{2} r^2 \theta$ → central angle

has to be in radians

area of sector

A sprinkler on a golf course fairway sprays water over a distance of 70 feet and rotates through and angle of 120°. Find the area of the fairway watered by the sprinkler.

Convert from miles per hour to feet per second.

75 mph

Ford Taurus has a wheel diameter of 26.16 inches. What is the speed in mph when the wheels are turning at 800 revolutions per minute?

Section 4.1 Pg. 267-269

Problems #: 1-4, 7-49 odd, 51-58, 61, 69, 70, 76