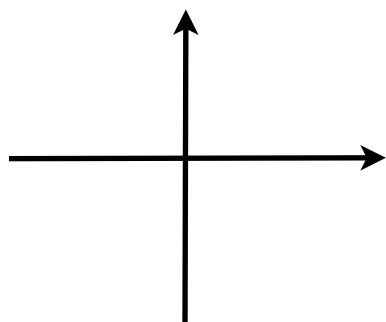
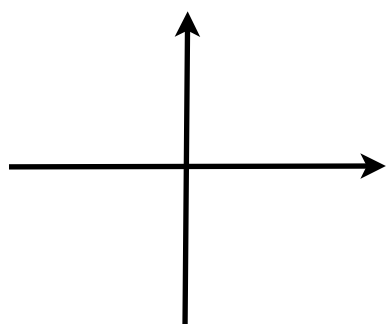


UNIT 4: TRIGONOMETRY (CONTINUED)
DAY 1: RADIAN MEASURE

Angles: An angle is in standard position when its vertex is at the origin and the initial arm is fixed on the x-axis.

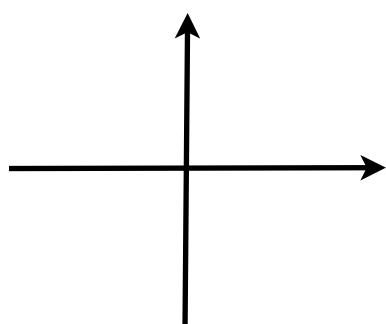


STANDARD POSITION



The terminal arm rotates about the origin.

POSITIVE ROTATION - COUNTERCLOCKWISE



NEGATIVE ROTATION - CLOCKWISE

Angles can be measured in DEGREES or RADIANS.

Radians: The measure of an angle can be stated in terms of the length of its arc.

When arc length = radius,
The measure of the angle is 1 radian.

GENERAL RULE:

of radians
(Measure of arc in radians) = $\frac{\text{arc length}}{\text{radius}}$

$$\theta = \frac{a}{r}$$

OR

Arc length = (# of radians)(radius)

$$a = \theta \times r$$

We know π = 180° or 3.14 radians. Why?
(Radian measure is usually written with θ)

CONVERTING DEGREES TO RADIANS

Ex. 1)

A) 90°

b) 180°

c) 270°

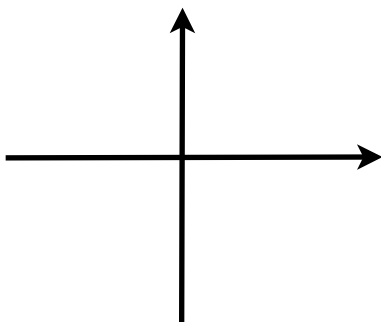
d) 360°

E) 1°

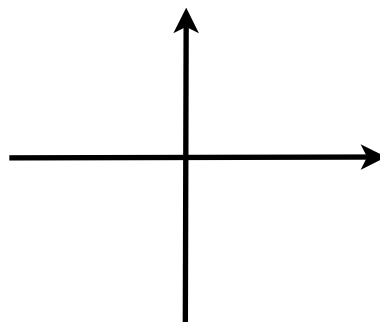
f) 120°

g) 35°

In degrees....



In radians....



1 full rotation is 360° or 2π rad.

CONVERTING RADIANS TO DEGREES --->

Ex 2)

A)

b)

c)

d)

E)

f)

g)

h)

Ex 3) Change each degree measure to radians (in approximate form) -->

A) 30°

b) 240°

Ex. 4) Find the indicated quantity in each diagram.

A)

b)

c)