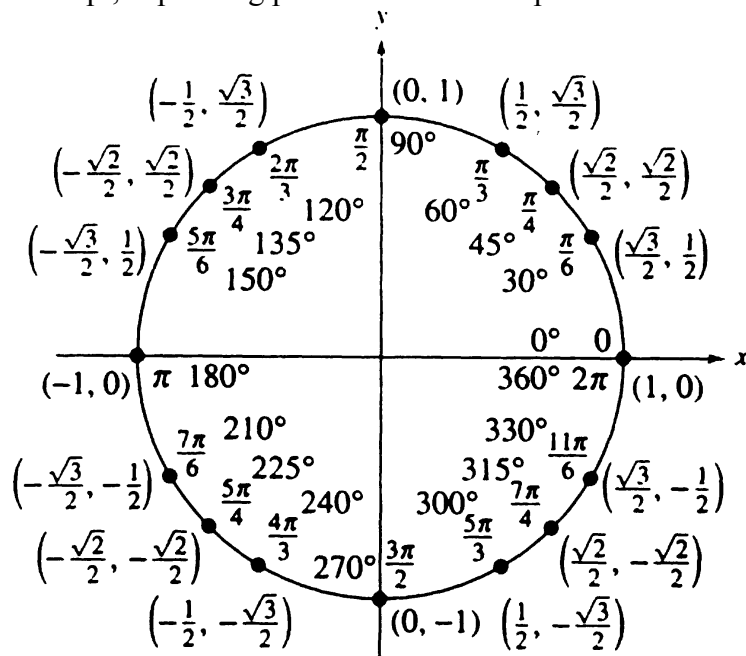


Part A: Angular Position

Angular position is represented by the symbol θ and is typically written in terms of radians from 0 to 2π , expressing position in different parts of the circle.



If angular position is greater than 2π , it will reset to a value between 0 and 2π . ($2\pi = 6.283$).

Positive angular positions refer to counterclockwise motion, beginning at the $x = 0$ line. Negative angular positions refer to clockwise motion, beginning at the $x = 0$ line.

For each of the following angular positions, write what *quadrant* of the thing will be in:

$\theta = 1$	$\theta = 5$
$\theta = 2$	$\theta = 6$

$\theta = 3$	$\theta = 7$
$\theta = 4$	$\theta = 8$
$\theta = -1$	$\theta = -3$
$\theta = -5$	$\theta = -7$
$\theta = 100$	$\theta = -50$

Complete the following conversions using the conversion factor method:

360 degrees = 2π radians = 1 revolution

180 degrees = π radians = 0.5 revolutions

Convert 4 revolutions to radians.

Convert 10 and a half revolutions to radians.

Convert 200 degrees to radians.

Convert 10 degrees to radians.

How many degrees are in 3 revolutions?

How many revolutions is 8π radians?

How many revolutions are in 24 radians?

How many revolutions is 10,000 degrees?

Part A: Angular Displacement**Angular Displacement**

- Change in angular position
- The SI unit is radians. Because radians are dimensionless, so is angular displacement.
- When you go around a whole circle, the angular displacement is 2π .

What is the my angular displacement if:

1. I run around in a circle one time?
2. I run around half a circle?
3. I run around a quarter of a circle?
4. I run around an eighth of a circle?
5. I run around in two circles?
6. I run around ten circles?
- 7 I run around in 100 circles?