

1 Rotation and Angular Velocity

Rotation angle ($\Delta\theta$) is the ratio of the arc length to the radius of the curvature:

$$\Delta\theta = \frac{\Delta s}{r}$$

Degrees to Radians:

90	$\frac{1}{2}\pi$
180	π
270	$1\frac{1}{2}\pi$
360	2π

Angular Velocity:

$$\omega = \frac{\delta\theta}{\Delta t}$$

Different than Linear velocity: $v = \frac{\Delta s}{\Delta t}$ Using $\theta = \frac{\Delta s}{r}$ we find $\Delta s = r\Delta\theta$.
from there:

$$v = \frac{r\Delta\theta}{\Delta t} = r\omega$$

From there we can find that $v = r\omega$ and $\omega = \frac{v}{r}$