Flipping Physics Lecture Notes:

Introduction to Uniformly Angularly Accelerated Motion

Just like an object can have Uniformly Accelerated Motion or UAM and object can have Uniformly Angularly Accelerated Motion, UαM. This table compares the two:

If the following is constant…	linear acceleration, a	angular acceleration, α
we can use the _____ equations	UAM	UαM
There are 5 variables	$v_f, v_i, a, \Delta x, \Delta t$	$\omega_f, \omega_i, \alpha, \Delta\theta, \Delta t$
There are 4 equations	$v_f = v_i + a\Delta t$ $\Delta x = v_i\Delta t + \frac{1}{2}a\Delta t^2$ $v_f^{\,2} = v_i^{\,2} + 2a\Delta x$ $\Delta x = \frac{1}{2}\left(v_f + v_i\right)\Delta t$	$\omega_f = \omega_i + \alpha\Delta t$ $\Delta\theta = \omega_i\Delta t + \frac{1}{2}\alpha\Delta t^2$ $\omega_f^{\,2} = \omega_i^{\,2} + 2\alpha\Delta\theta$ $\Delta\theta = \frac{1}{2}\left(\omega_f + \omega_i\right)\Delta t$ **Use Radians!**

If we know 3 of the variables we can find the other 2. Which leaves us with 1 Happy Physics Student!

When you use the Uniformly Angularly Accelerated Motion equations please use radians for your angular quantities. Most of the time you have to use radians in the UαM equations and you always can use radians in the UαM equations. Therefore, please, always use radians in the UαM equations.