Equation sheet for final exam

You may write on this (front and back) and bring it with you to the exam. You can also bring your exam 3 equation sheet and any notes in it. Additional notes are not allowed.

Chapter 8 equations

translation	rotation	connection
x	θ	$x = r\theta$
v	w	$v = r\omega$
a	α	$a_{\tan} = r\alpha$
m	I	$I = \sum mr^2$
F	τ	$\tau = rF\sin\theta$
$KE_{trans} = \frac{1}{2}mv^2$	$KE_{rot.} = \frac{1}{2}I\omega^2$	
$p = mv$	$L = I\omega$	
$W = F\Delta x$	$W = \tau\Delta\theta$	
$\sum F = ma$	$\sum \tau = I\alpha$	

angular velocity: $\bar{\omega} = \frac{\Delta\theta}{\Delta t}$ if ω constant: $\theta = \theta_0 + \omega t$

angular acceleration: $\bar{\alpha} = \frac{\Delta\omega}{\Delta t}$

if α constant: $\omega = \omega_0 + \alpha t$ $\theta = \theta_0 + \omega_0 t + \frac{1}{2}\alpha t^2$ $\omega^2 = \omega_0^2 + 2\alpha(\theta - \theta_0)$

centripetal acceleration: $a_{cent} = \frac{v^2}{r} = \omega^2 r$