$$\alpha_{avg} = \frac{\Delta\omega}{\Delta t} = \frac{\omega_f - \omega_i}{\Delta t}$$

$$\alpha_{instantaneous} = \frac{d\omega(t)}{dt} = \frac{d^2\theta(t)}{dt^2}$$

$$a_t = r\alpha$$

$$a_c = \frac{v^2}{r}$$

$$a_c = \omega^2 r$$

$$a = \sqrt{a_t^2 + a_c^2}$$

$$a = r\sqrt{\alpha^2 + \omega^4}$$

Centripetal acceleration	
Angular acceleration	
Linear acceleration	
Total acceleration	

LIVEWORKSHEETS