Q2. A]

$\frac{d\theta}{dt} = \omega$
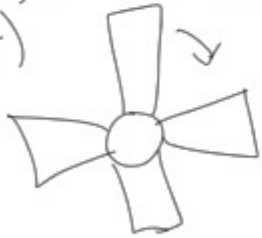
B] $\omega_0 = \omega(t=0)$

C] $\omega_5 = \omega(t=5.00s)$

D] $\frac{\theta(5_s) - \theta(0_s)}{5_s} = \frac{\theta(5_s)}{5_s}$

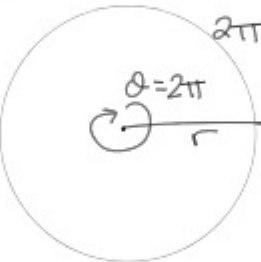Q3. A) $B > C > A = F > D = E$

B) All the same acceleration.

Q4. A)

$f_f = 180 \frac{rev}{min} \frac{1 min}{60s}$

$f_i = 500 \frac{rev}{min} \frac{1 min}{60s}$

$\frac{f_f - f_i}{t} = \alpha$

$t = 4.50s.$

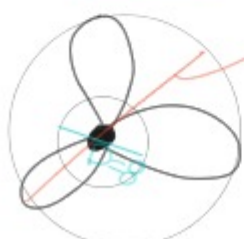$\frac{\left(\frac{180}{60} - \frac{500}{60}\right)\frac{rev}{s}}{4.5s}$

B) $\theta = \omega_0 t + \frac{1}{2}\alpha t^2$

$= \frac{500}{60} \frac{rev}{s}(4.5s) + \frac{1}{2}\left(-1.185 \frac{rev}{s^2}\right)(4.5s)^2$

C) $f_f = 0$, $f_i = \frac{180}{60} \frac{rev}{s}$, $\alpha = -1.185 \frac{rev}{s^2}$

$\alpha = \frac{f_f^0 - f_i}{t}$

$t = \frac{-180\frac{rev}{60s} s}{-1.185 \frac{rev}{s^2}}$

Q5A) $f = 225 \frac{rev}{min}$, $\omega = ?$

$= 225 \frac{rev}{min} \frac{1 min}{60s} 2\pi \frac{rad}{rev} = 23.6 \frac{rad}{s}$

B) $V = \omega r$

$s = \theta r$

$2\pi r$

$\theta = 2\pi$

$V = \frac{ds}{dt} = \frac{d(\theta r)}{dt}$

$= r \frac{d\theta}{dt}$

$= r\omega$

C)

$D = 18.29 m$

$f = 225 \frac{rev}{min}$

$V = R\omega = \frac{225 rev}{60 s} \pi(18.29m)$

D)

$C = \pi D$