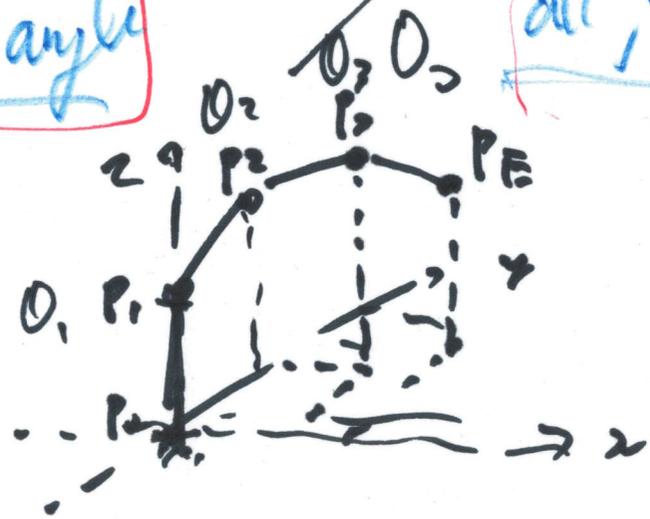
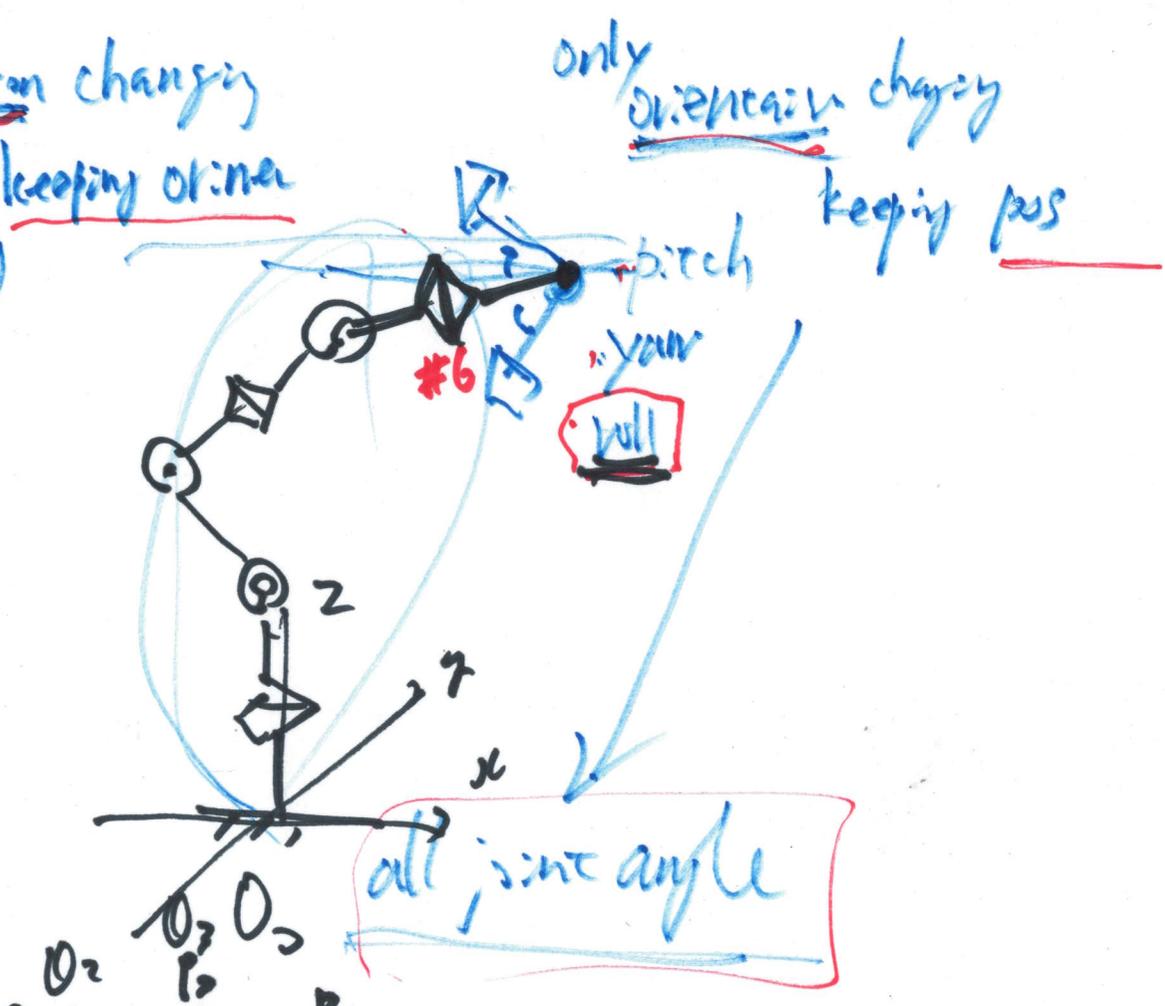
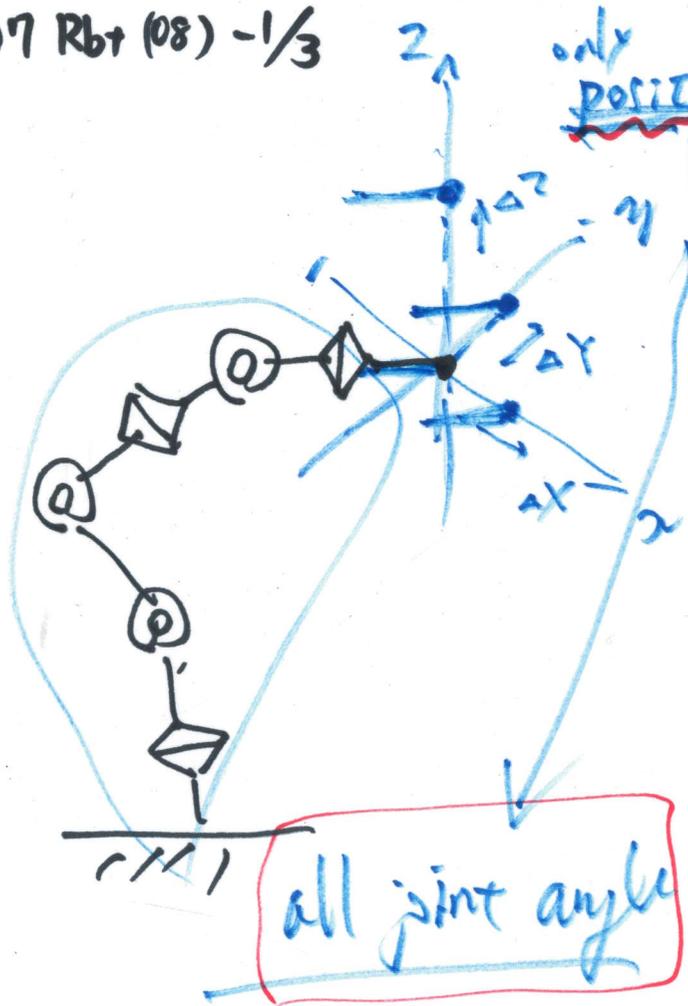


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linear movement

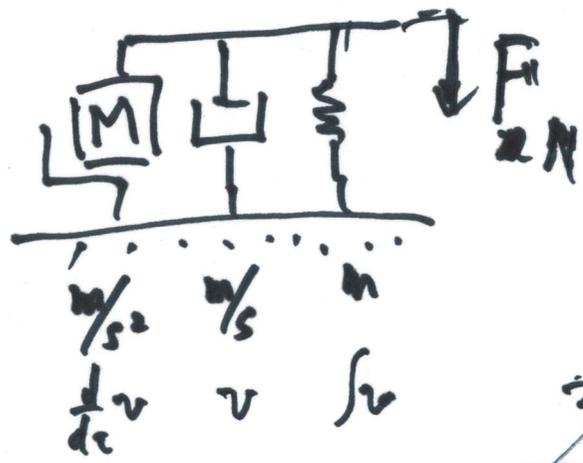
3 passive elements

mass	M	kg	F	N
dampor	D	kg/s		
spring	K	kg/m		

rotational movement

3 passive elements

inertia	I	J	rad/s <sup>2</sup>	T	Nm
dampor	B		rad/s		
spring	K		rad		

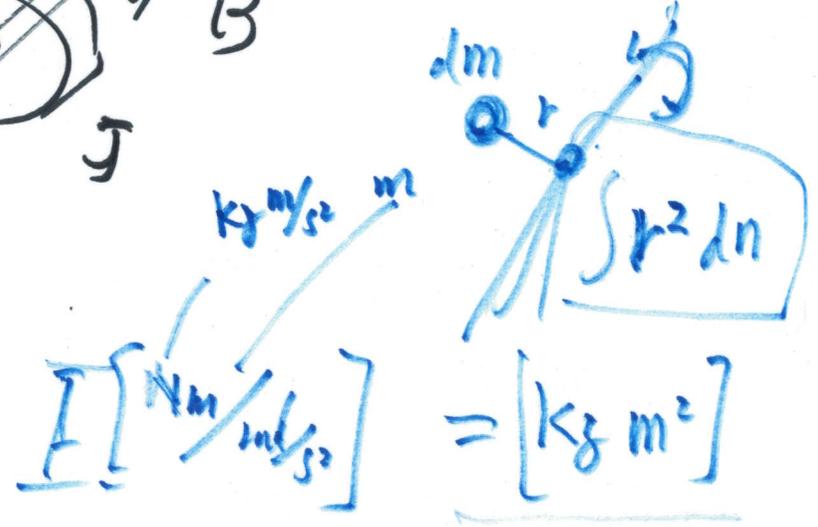
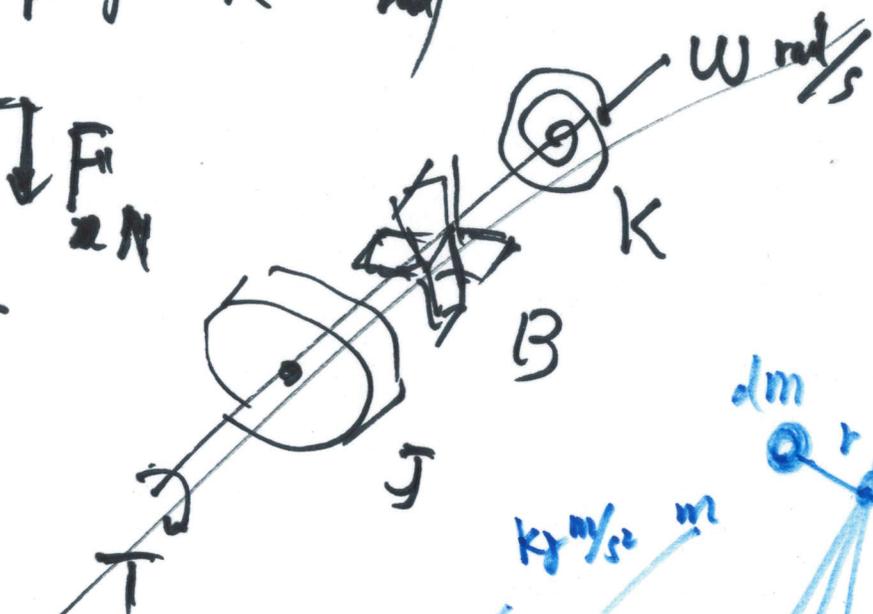


$$F = M \frac{dv}{dt} + Bv + Kx$$

Units:  $\text{N} = \text{kg} \frac{\text{m}}{\text{s}^2} + \text{kg/s} \cdot \text{m/s} + \text{kg/m} \cdot \text{m}$

$$T = J \frac{d\omega}{dt} + D\omega + K\theta$$

Units:  $\text{Nm} = \text{kg} \frac{\text{m}^2}{\text{s}^2} \cdot \frac{\text{rad}}{\text{s}} + \text{kg m}^2/\text{s} \cdot \frac{\text{rad}}{\text{s}} + \text{kg m}^2 \cdot \text{rad}$



$$I = \int r^2 dm = \text{kg m}^2$$

$$= \text{kg m}^2$$

