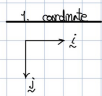
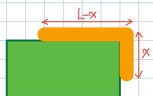
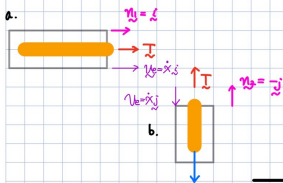


String Problems



2. FBD



density of string  $\cdot \rho$  span unit length  
length:  $L$

not considering rotation.

T(?) = ? (Hertz)

3. Reynolds Transport Theorem (EOM)

$$\frac{d}{dt} \langle B \rangle_{CV} = \frac{d}{dt} \langle B \rangle_{CV} + \int_{CV} \rho (\mathbf{u} \cdot \nabla) B dV$$

or  $B = m \dot{x}$ ,  $A = \dot{x}$

$$\frac{d}{dt} \langle m \dot{x} \rangle = \Sigma F_x = T - T + \int_{CV} \rho (\dot{x} \cdot \nabla) (\dot{x}) dV$$

$$= \dot{x} \rho (L - x) \dot{x} + \dot{x} \rho \dot{x} L$$

$$\rho \dot{x} L - \rho \dot{x} L = T \dots \text{O}$$

(b)  $B = m \dot{z}$ ,  $A = \dot{z}$

$$\Sigma F_z = T(-1) + \int_{CV} \rho g (-1) dV = \dot{z} \int_{CV} \rho (-1) dV + (\dot{z} \cdot \nabla) \rho (-1) dV$$

$$= \dot{z} \int_{CV} \rho g dV + \dot{z} \rho g (-1) dV$$

$$\rho \dot{z} L = -T + \rho g L \dots \text{O}$$

● :  $\frac{d}{dt} \int_{CV} \rho p dV$

에서 ● :  $\frac{d}{dt} \{ \dot{x} \cdot \hat{i} \rho (L-x) \}$  가 될 때  $\int_{CV}$  적분기호를 풀 때  $\dot{x}$  도 길이에 대한 식인데  $\int_{CV}$  적분기호를 풀 때 왜  $\dot{x}$  에 영향을 미치지 않는지 궁금합니다.