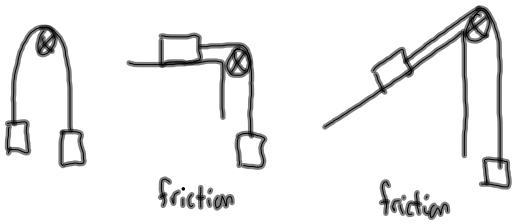
TEST

10-2 Connected Masses



- FBDs for each mass $\Rightarrow \vec{F}_{net} = m\vec{a}$

$\Rightarrow$ system of equations to solve (T and a)

10-3 Static Equilibrium

① $\Sigma\vec{\tau} = 0 \quad (\vec{\tau}_{net} = 0)$ ← Forces are acting through different pts.

$\Sigma\vec{\tau}_{ccw} = \Sigma\vec{\tau}_{cw}$

RECALL: $\tau = r_\perp F$

$\tau = rF\sin\theta$ ← angle b/w the object and the line of action of the force.

② $\Sigma\vec{F} = 0 \quad (\vec{F}_{net} = 0)$

10-4 2D Collisions

Law of Conservation of Momentum:

$\vec{p}_{total} = \vec{p}'_{total}$ $\quad (\Delta\vec{p}_1 = -\Delta\vec{p}_2)$

(before) = (after) ↑ object 1 object 2

RECALL: $\vec{p} = m\vec{v}$ * Sketch a diagram of the collision

① Draw a momentum vector addition diagram (use if one of the two objects is a rest before or after the collision)

② Set up an x-y chart for each object before + after the collision

REVIEW p529/26-30 p627/38, 41, 45

	BEFORE x	BEFORE y	AFTER x	AFTER y
p_1			p'_1	
p_2			p'_2	
p_{total}			p'_{total}	

Same Same

- elastic collisions $\Rightarrow$ KE is conserved $\left(E_k = \frac{1}{2}mv^2\right)$

Nov 12-9:00 AM