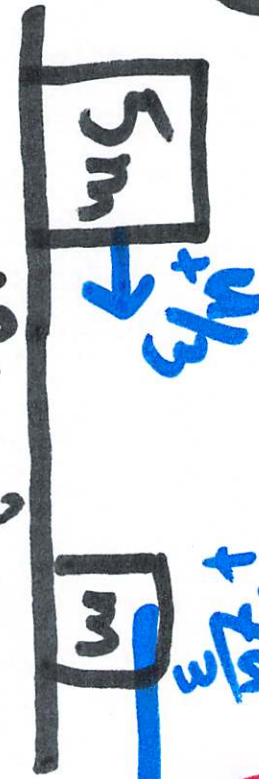


elastic collision (in 1-d!)

$\vec{p}$  cons.  $\leftarrow$  elastic  
 $\underline{KE}$  cons. before



④  $\vec{p}_{total} = \frac{12mu^2}{3} = 4mu^2$

$K_{total} = \frac{1}{2} 5m \frac{u^2}{9} + \frac{1}{2} m \left( \frac{4}{3}u \right)^2 = 3mu^2$

①  $M_{total} = 6m$   
 $\vec{p}_{total} = 4mu \hat{x}$   
 $K_{total} = \frac{1}{2} 5mu^2 + \frac{1}{2} mu^2 = 3mu^2$   
 $\vec{V}_{cm} \equiv \vec{p}_{total} / M_{total} = \frac{2}{3} \vec{u}$

② subtract  $2/3u = V_{cm}$



$\vec{p}_{total} = \vec{0}$

$\vec{p}_{total} = \vec{0}$

③ add  $2/3u$

