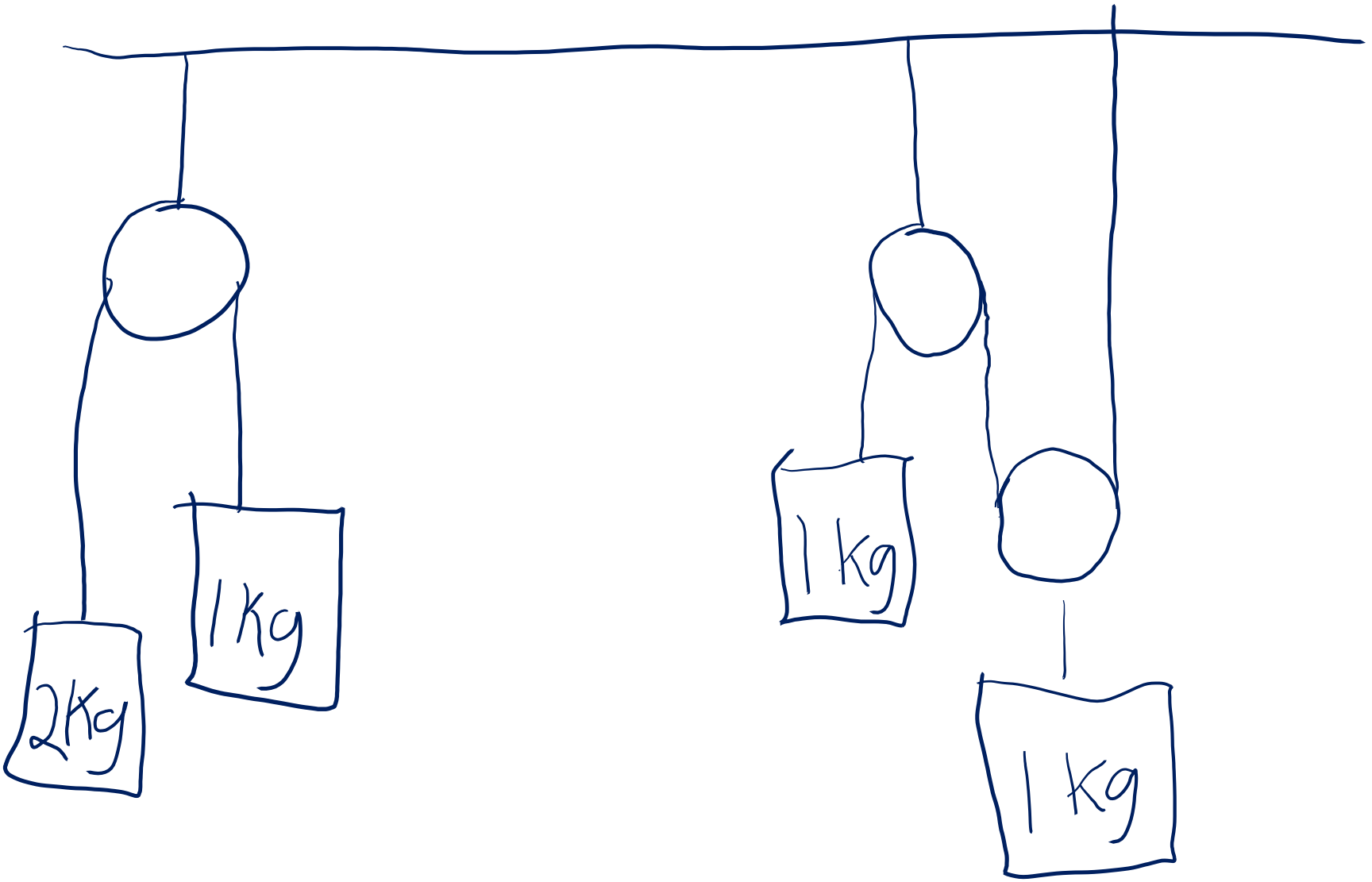
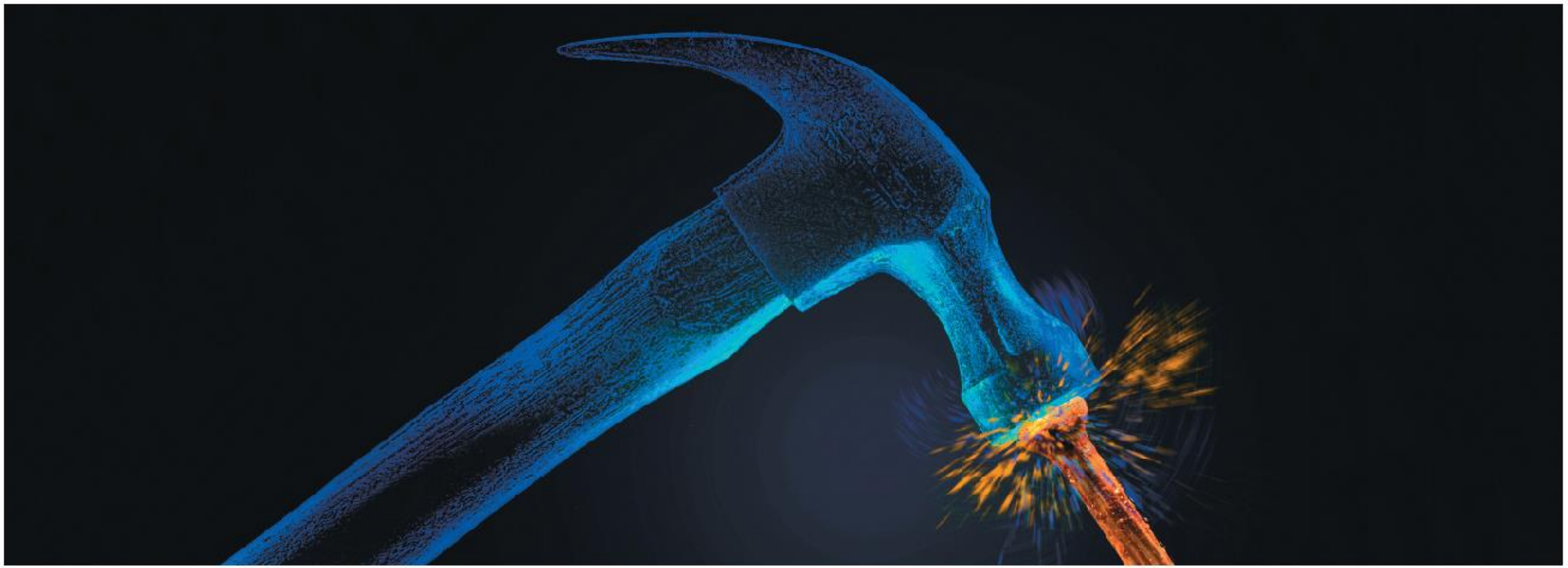
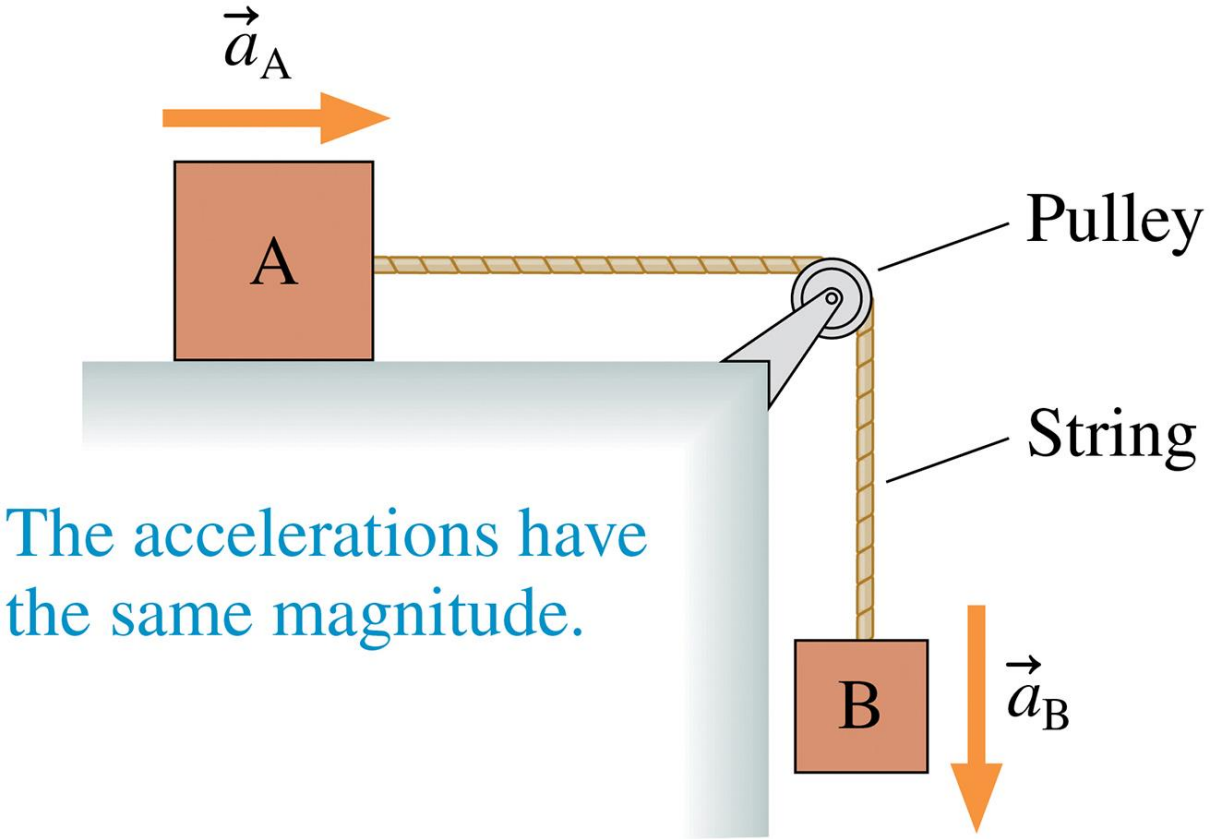
Which system has the larger acceleration magnitude?



Chapter 7 – Newton's Third Law

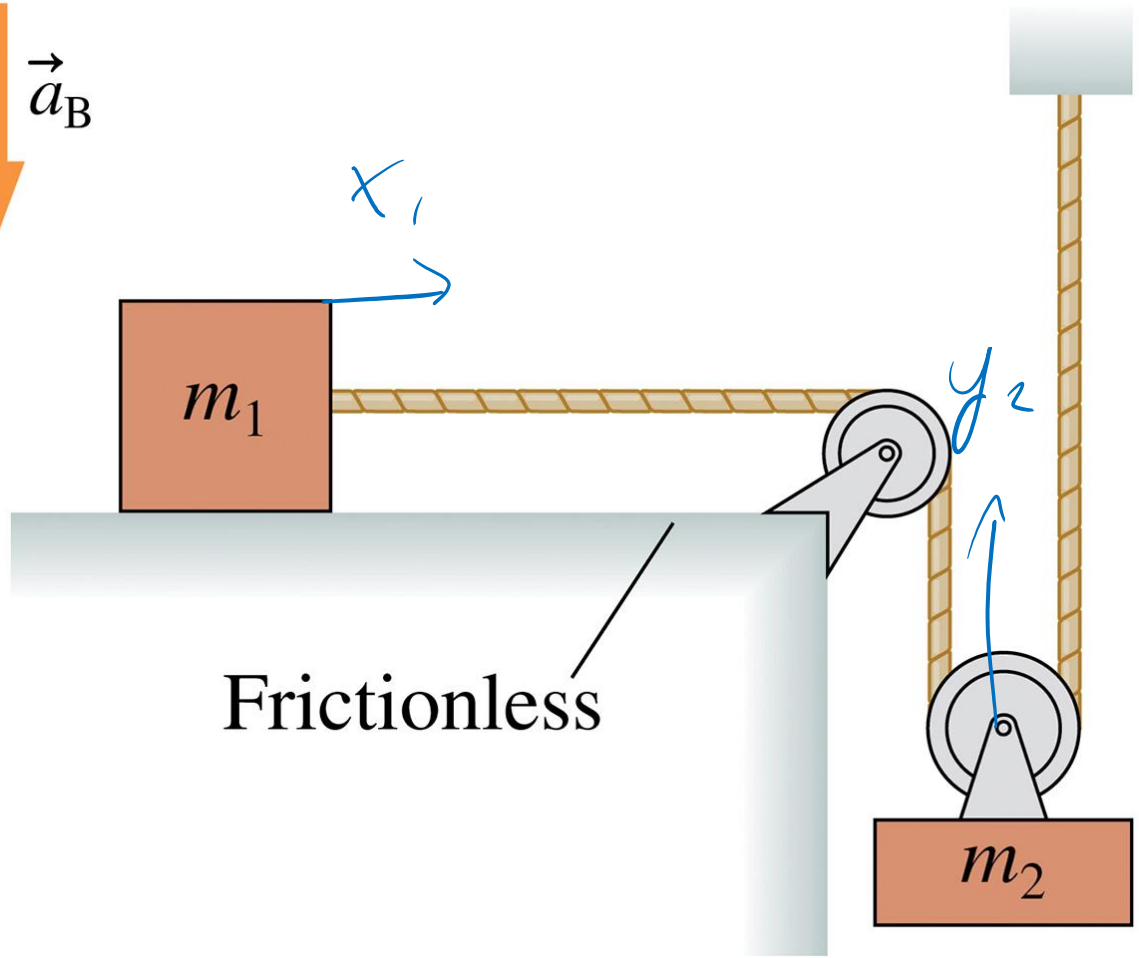
- Newton's Third Law
- Objects/Systems/Environment
- Acceleration Constraints





$|\vec{a}_A| = |\vec{a}_B|$

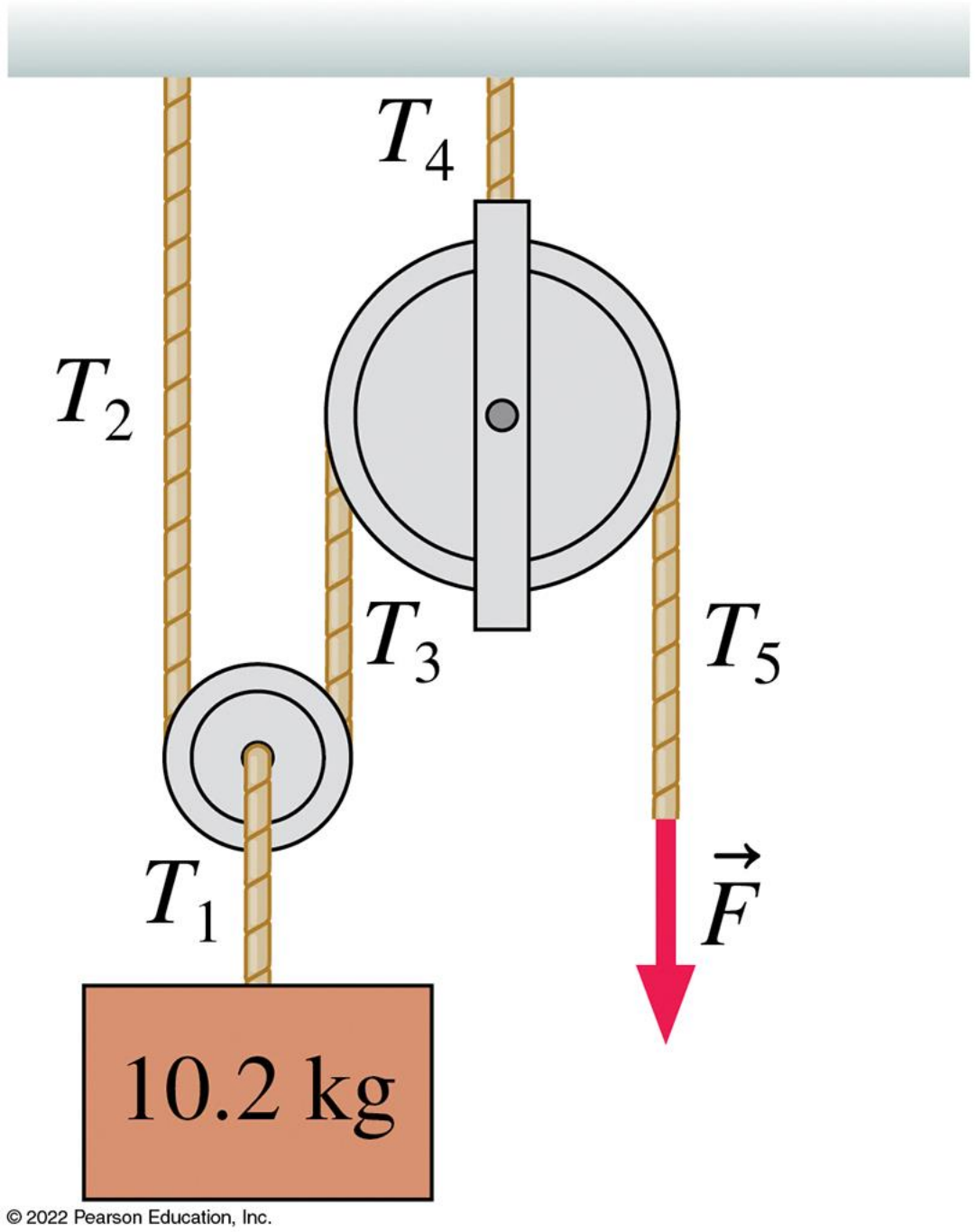
The accelerations have the same magnitude.



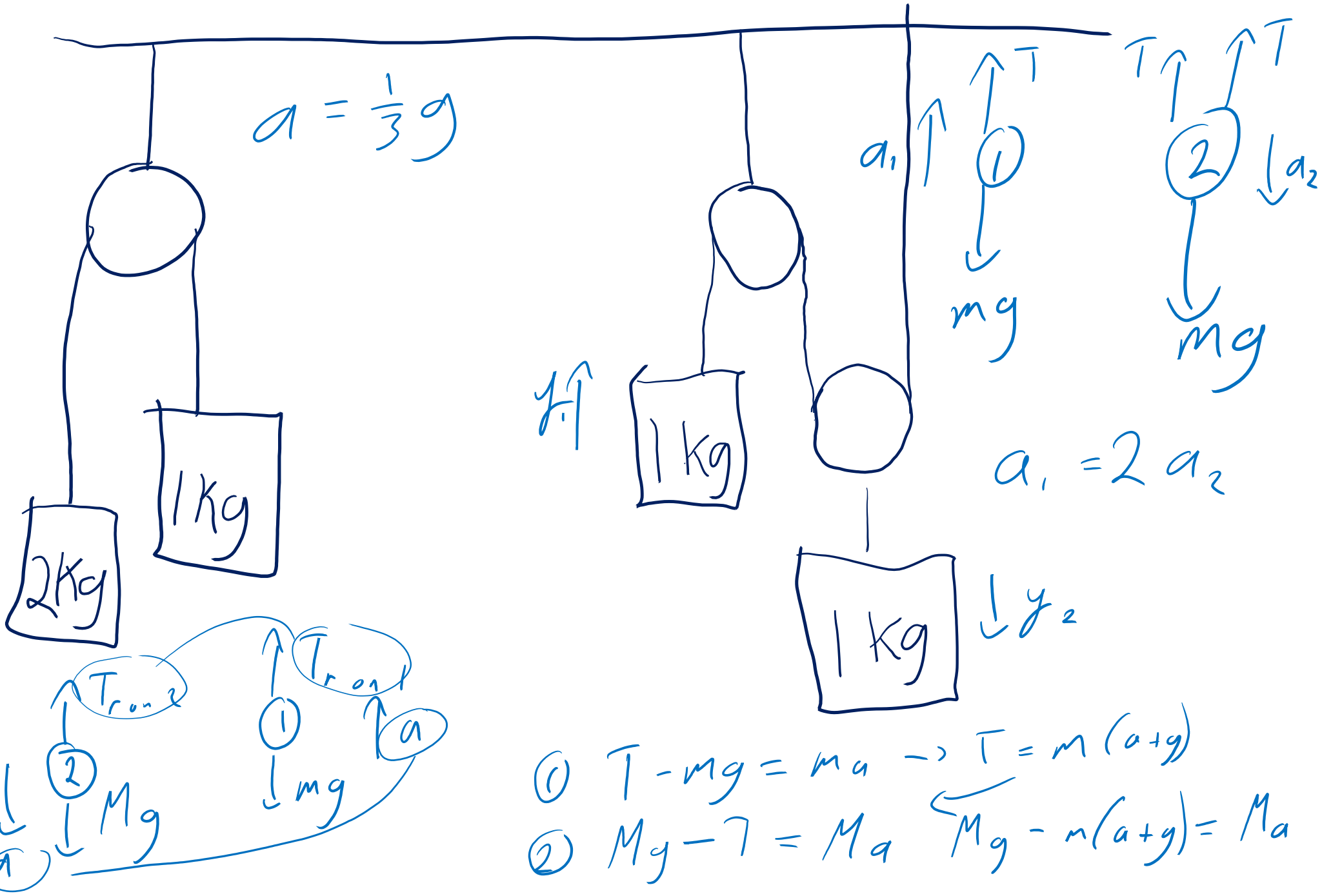
$-a_{x_1} = 2a_{y_2}$

$W = F \times d$

Team Up Questions



Which system has the larger acceleration magnitude?



Which system has the larger acceleration magnitude?

① $T - mg = ma_1 \rightarrow T = m(a_1 + g)$

② $mg - 2T = ma_2 = \frac{1}{2}ma_1$

$a_1 = 2a_2$

$T = T = T$

$\frac{1}{2}ma_1 = mg - 2m(a_1 + g)$

$\frac{1}{2}a + 2a = g - 2g = -g$

$\frac{5}{2}a = -g$

$a = -\frac{2}{5}g$

$\rightarrow$ going down