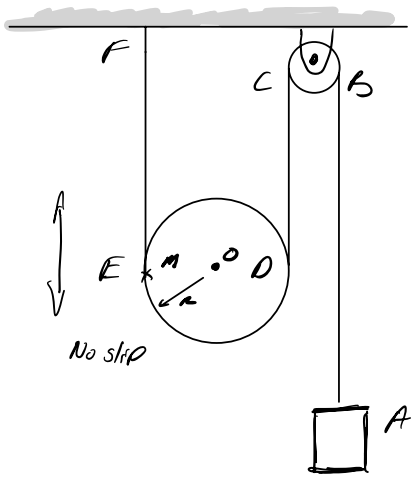

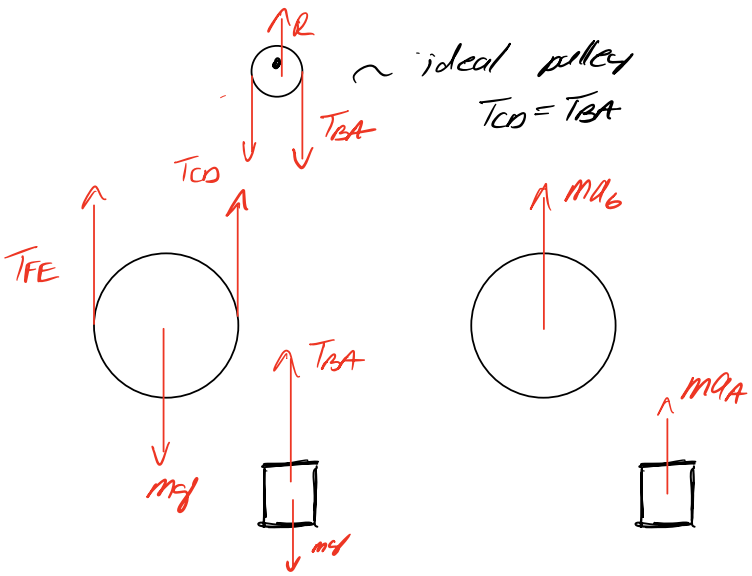

$T_{AB} = T_{CD}$

$\uparrow \Sigma F_y$: $T_{FE} + T_{CD} - mg = ma_B$ 1)

$\circlearrowleft \Sigma M_E$: $-mgR + T_{CD}(2R) = I_E\alpha$ 2)

$\uparrow \Sigma F_y$: $T_{CD} - mg = ma_A$ 3)

cable: $a_A = -a_D$ 4)

$a_D = 2R\alpha$ by no slip

$a_A = -2R\alpha$

3) $T_{CD} = ma_A + mg = m(-2R\alpha) + mg$

2) $-mgR + (-m2R\alpha + mg)2R = I_E\alpha$

$mgR - 4mR^2\alpha = I_E\alpha$ $\quad I_E = \frac{1}{2}mR^2$

$\alpha = \frac{mgR}{\frac{9}{2}mR^2} > 0$

$T_{CD} > T_{FE}$

↳ causes rotation