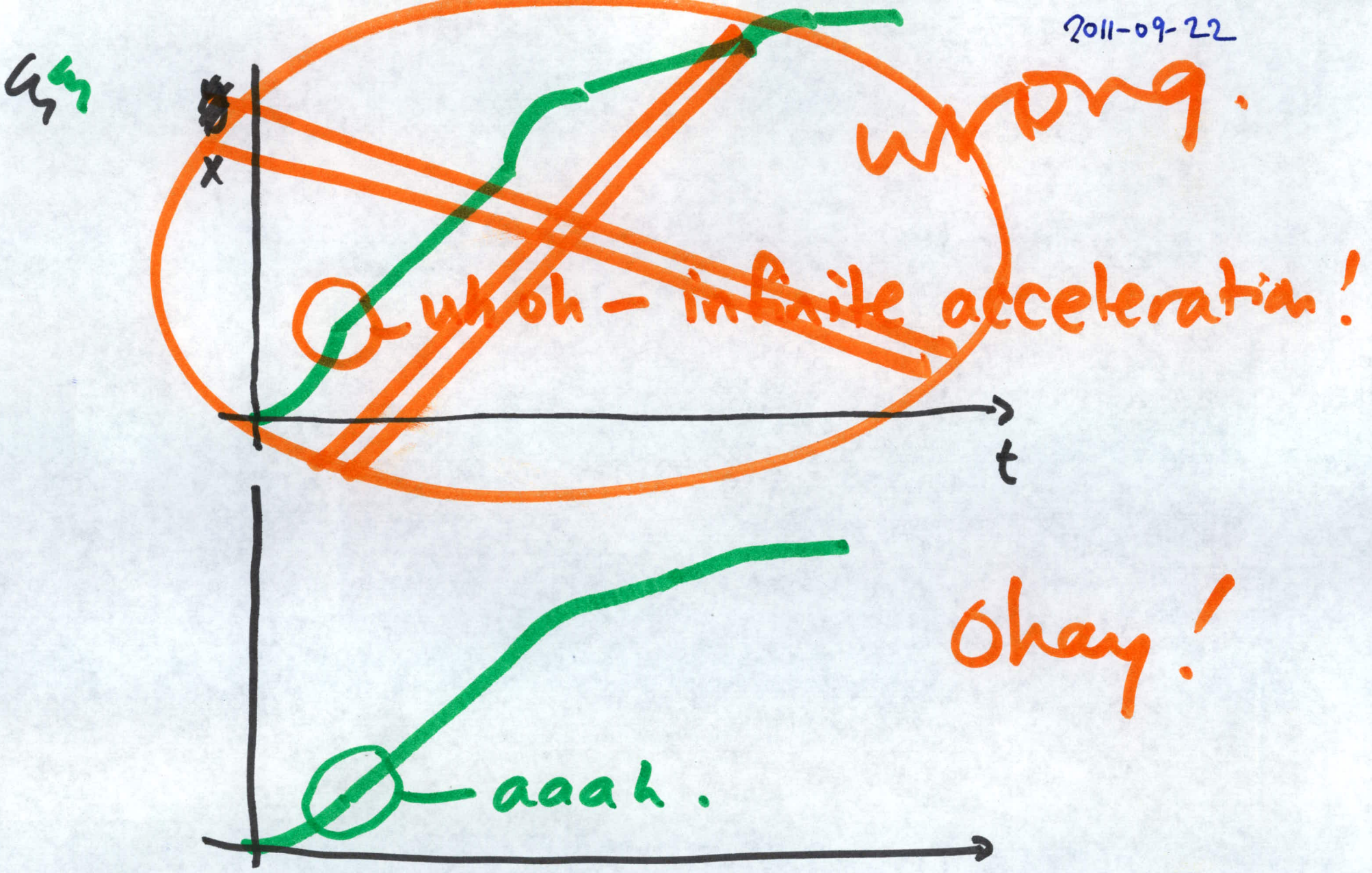
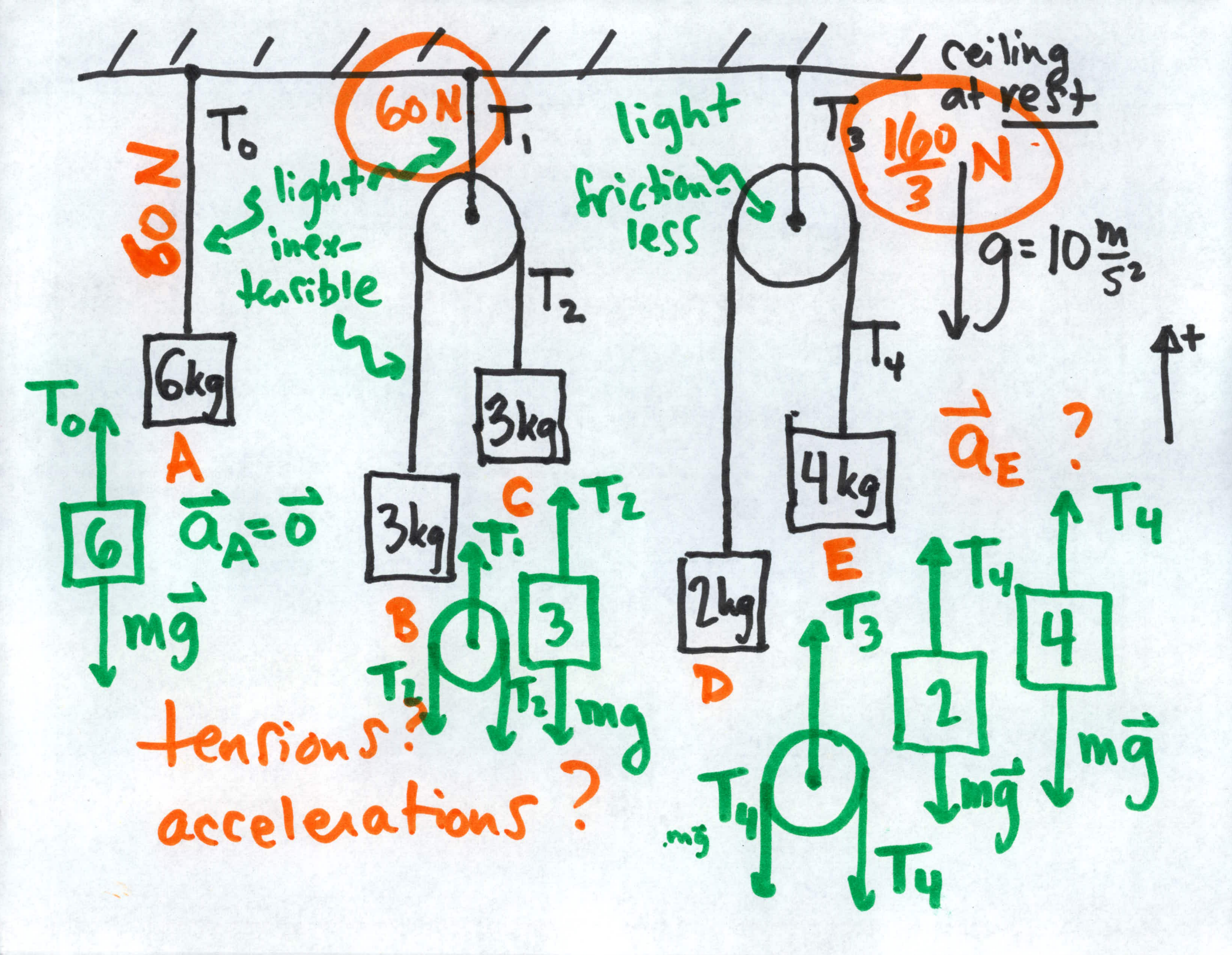
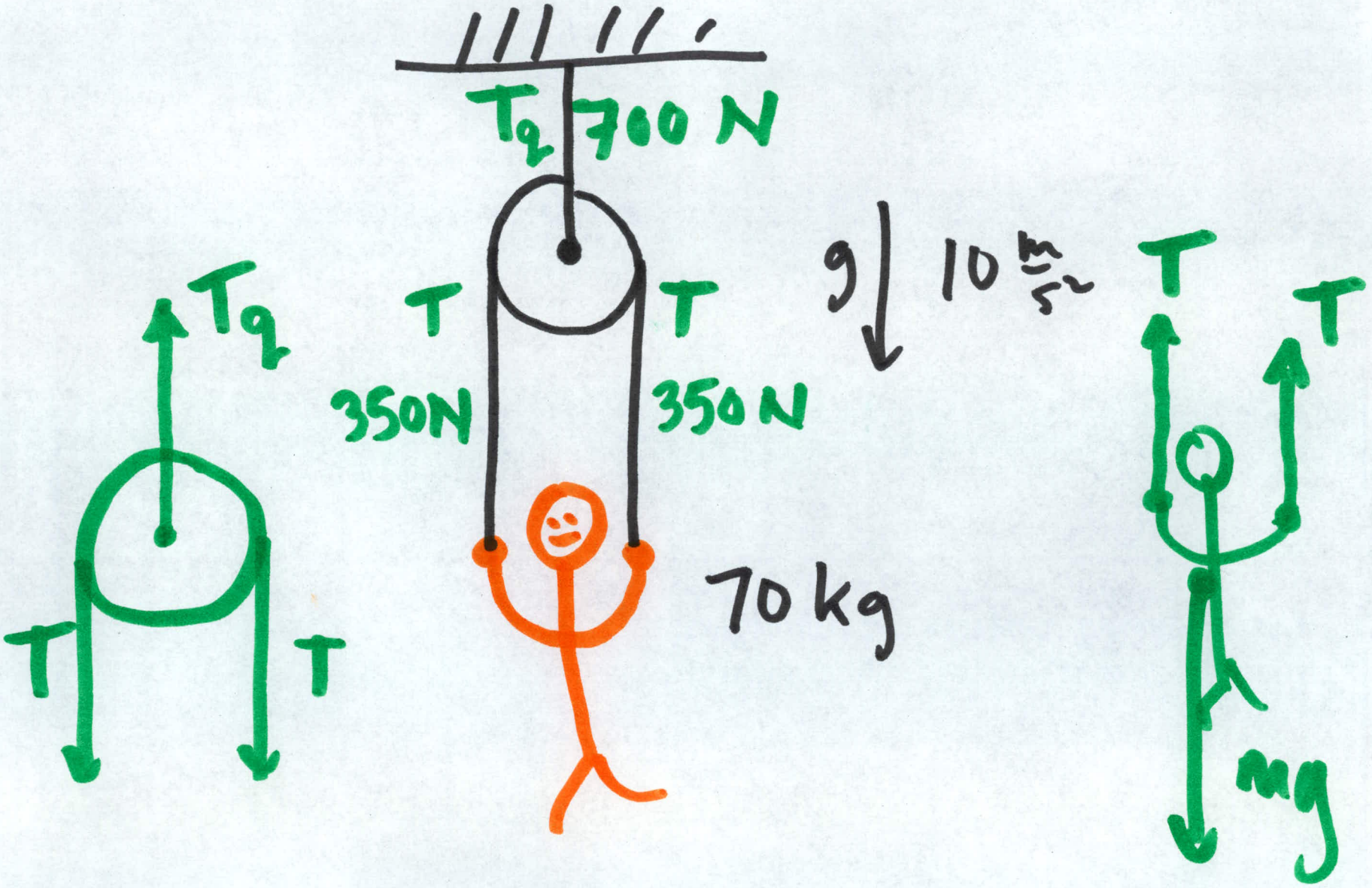
2011-09-22




ceiling at rest
60 N
T_0
T_1
T_2
T_3
T_4
$\frac{1600}{3}$ N
light inextensible
light frictionless
$g = 10 \frac{m}{s^2}$
+
6kg
3kg
3kg
4kg
2kg
A
B
C
D
E
$\vec{a}_A = \vec{0}$
$\vec{a}_E$?
6
3
2
4
$m\vec{g}$
tensions?
accelerations?


T_2
700 N
T
T
350N
350N
70 kg
g
10 $\frac{m}{s^2}$
T_2
T
T
T
T
mg

Block D:

① $T_4 - (2kg)|\vec{g}| = (2kg)\,a_D$

E:

② $T_4 - (4kg)|\vec{g}| = (4kg)\,a_E$

$a_E = -a_D$

$T_4 = (4kg)\left(-\frac{1}{3}g\right) + (4kg)g$

$= \frac{8}{3}(kg)\,g = \frac{80}{3}N$

~~① - ②~~

② - ① $-(4kg)|\vec{g}| - (-2kg)|\vec{g}| = (4kg)\,a_E + (2kg)\,a_E$

$a_E = \dfrac{(-2kg)|\vec{g}|}{6kg} = -\frac{1}{3}|\vec{g}|$