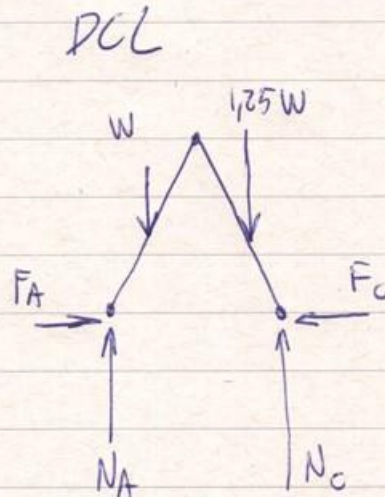
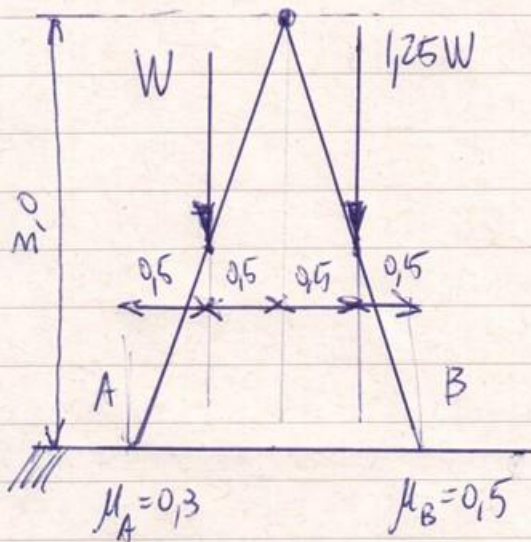


Ex) Determine W máximo sendo:



$$\sum F_x = 0 \rightarrow F_A = F_C \quad \textcircled{I}$$

$$\sum F_y = 0 \rightarrow N_A + N_C = 2,25W \quad \textcircled{II}$$

$$\sum M_A = 0 \rightarrow (2)N_C = (1,5)1,25W + (0,5)W = 2,375W \quad \textcircled{III}$$

$$\sum M_C = 0 \rightarrow (2)N_A = (1,5)W + (0,5)1,25W = 2,125W \quad \textcircled{IV}$$

h) escorrega 1º em A  $\therefore F_A = \mu_A N_A$

em IV  $\rightarrow N_A = 2,125W/2$  em III  $\rightarrow N_C = 2,375W/2$

com III em II  $\rightarrow (2,125 + 2,375)W = 2(2,25)W$  OK!

$\therefore$  há equilíbrio em y p/ qualquer W e  $\frac{N_C}{N_A} = 1,1176$

onde, em I  $F_B = F_A = \mu_A N_A = 0,3 \frac{(2,125W)}{2}$

$\Rightarrow F_C = F_A = \frac{0,6375W}{2} = 0,31875W$

para não escorregar em C,  $F_C \leq \mu_C N_C$

$$F_C = 0,31875 W < 0,5 \left( \frac{2,375}{2} W \right) = 0,59375 W$$

OK!

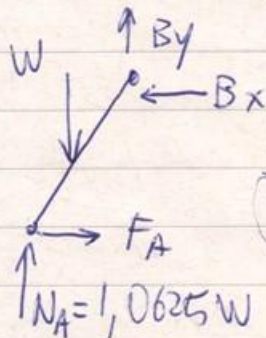
se testarmos  $(h_2)$ : escorrega em C  $\rightarrow F'_C = \mu_C N_C$

$$F'_A = F'_C = 0,59375 > \mu_A N_A = 0,31875 W.$$

$\therefore$  se o sistema escorrega, ele escorrega em A,

mas há escorregamento de fato ???

Tomando o corpo (AB), calculando  $F_A$  ...



$$\textcircled{X} B_x = F_A$$

$$\textcircled{Y} B_y = 0,0625 W$$

$$\boxed{\sum M_B = 0} \quad (0,5)W + (3)F_A - (1)N_A = 0$$

$$\Rightarrow F_A = \frac{(1,0625 - 0,5)W}{3} = \underline{\underline{0,1815 W}}$$

$$\text{ou seja: } F_A = 0,1815 W < \mu_A N_A = 3,1875 W$$

quando W aumenta,  $N_A$  e  $F_A$  aumentam proporcionalmente com  $F_A \ll \mu_A N_A$   $\nabla \nabla \nabla$   $\therefore$