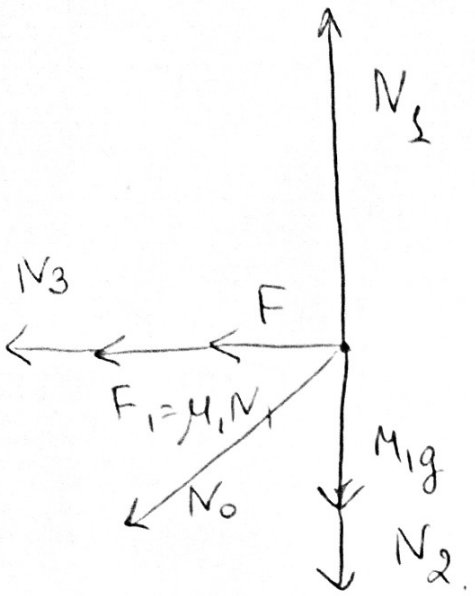

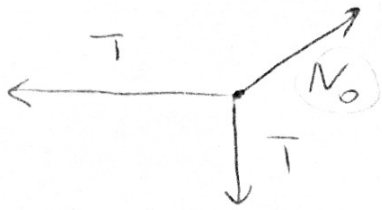

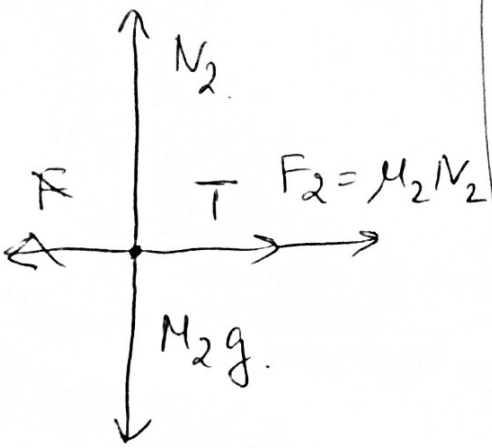

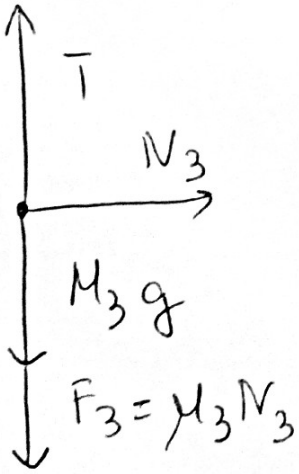

$$M_1 \ddot{x}_1 = F + N_3 + \mu_1 N_1 + T =$$
$$= F + T + \mu_1 (M_1 g + M_2 g) + M_3 \ddot{x}_3$$

$$M_2 \ddot{x}_2 = M_2 M_2 g + T$$

$$M_3 \ddot{x}_3 = N_3$$

$$M_3 \ddot{y}_3 = T - M_3 g - \mu_3 N_3 =$$
$$= T - M_3 g - \mu_3 M_3 \ddot{x}_3$$

rope : $a_1 - a_2 + a_3 = 0$

$\ddot{x}_1 \quad \ddot{x}_2 \quad \ddot{y}_3$

hole : $\ddot{x}_1 = \ddot{x}_3$