Külling & Noverraz : Moments de force
Corrigés

Y. Fracheboud

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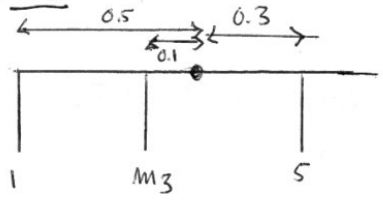
M03

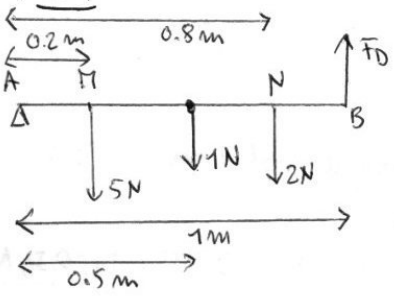


$1 \cdot 0.5 + 0.1 \cdot m_3 = 5 \cdot 0.3$

$0.5 + 0.1\, m_3 = 1.5$

$0.1\, m_3 = 1 \Rightarrow m_3 = 10\ kg$

M04



$5 \cdot 0.2 + 1 \cdot 0.5 + 2 \cdot 0.8 = F_D \cdot 1$

$1 + 0.5 + 1.6 = F_D$

$\Rightarrow F_D = 3.1\ N$

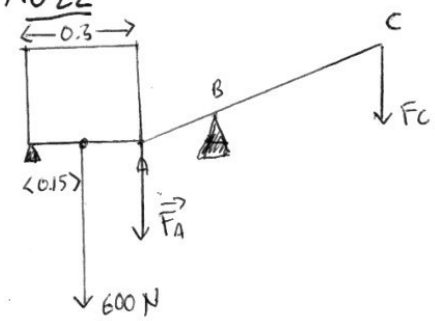
M013

$300 \cdot 0.5 = F \cdot 0.2 \Rightarrow F = 750\ N$

M019

$90 \cdot 0.03 = F \cdot 0.27 \Rightarrow F = 10\ N$

MO22

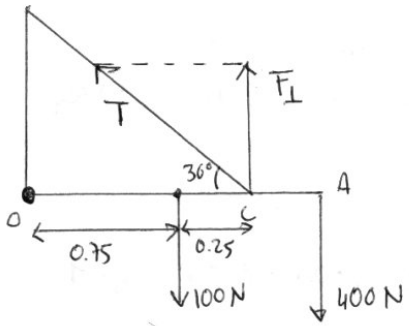


$600 \cdot 0.15 = F_A \cdot 0.3 \Rightarrow F_A = 306\ N$

$300 \cdot 0.12 = F_C \cdot 0.6 \Rightarrow$

$F_C = \frac{300 \cdot 0.12}{0.6} = \underline{\underline{60\ N}}$

MO24



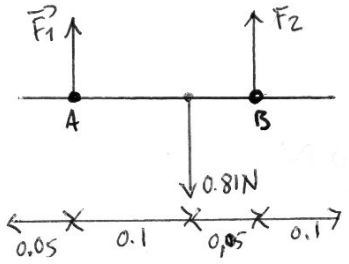
$F_\perp \cdot 1 = 100 \cdot 0.75 + 400 \cdot 1.5$

$T_\perp = 675\ N$

$\sin(30) = \frac{F_\perp}{T}$; $T = \frac{F_\perp}{\sin(30)}$

$\Rightarrow T = \underline{\underline{1350\ N}}$

MO35



avec l'axe de rotation en A :

$0.81 \cdot 0.1 = F_2 \cdot 0.15$; $F_2 = \underline{\underline{0.54\ N}}$

avec l'axe de rotation en B :

$0.81 \cdot 0.05 = 0.15 \cdot F_1$

$F_1 = \underline{\underline{0.27\ N}}$