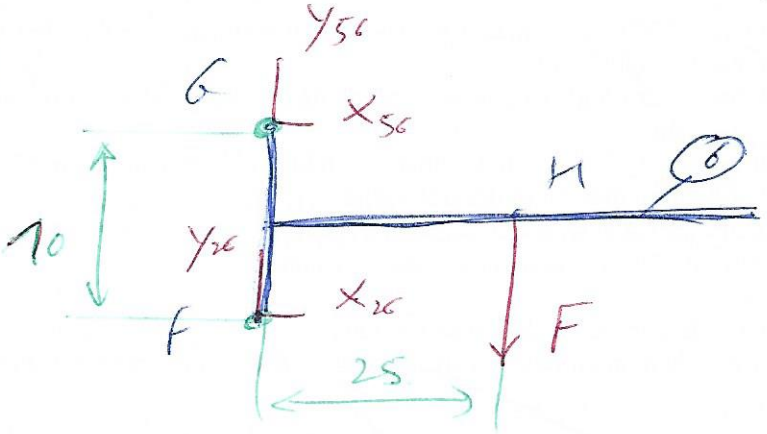
TD Escalator (Corrigé)

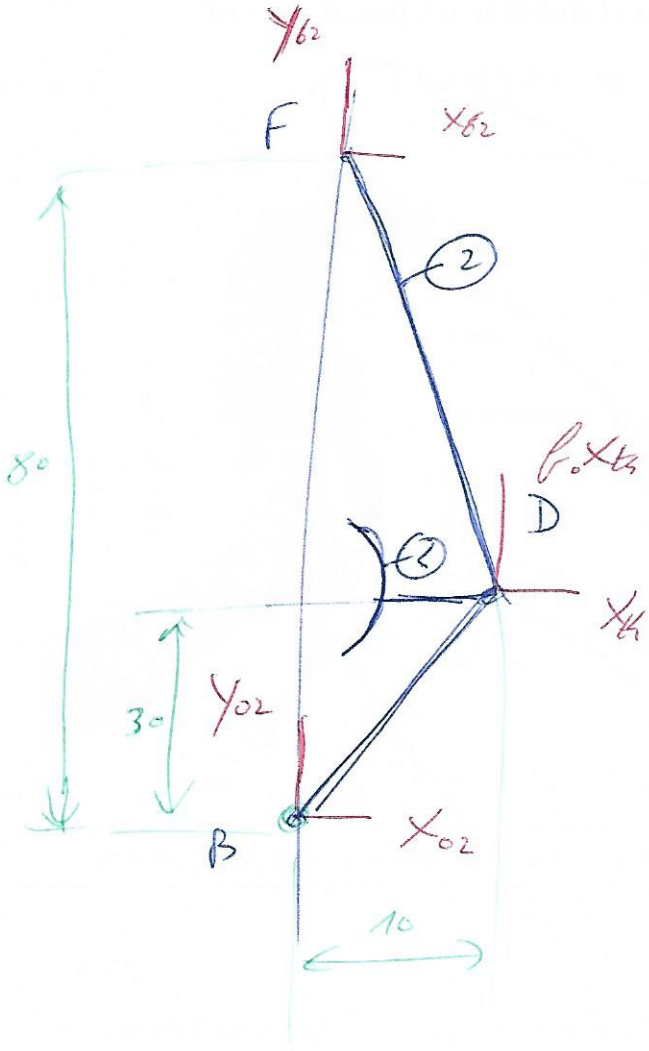
Q1



(on isole ⑥)

$$\sum \vec{M}(G) = 0 \Rightarrow 10\,X_{26} - 25\,F = 0.$$

$$\Rightarrow X_{26} = 2{,}5.F$$



$$\sum \vec{M}(B) = 0$$

0,4

"

$$-80.X_{62} - 30.X_{14} + 10 X_{14} = 0$$

$$+80 \times 2{,}5.F - 26\,X_{14} = 0$$

$$200\,F - 26\,X_{14} = 0$$

$$\frac{X_{14}}{F} = \frac{100}{13}.$$

(on isole 2+5)

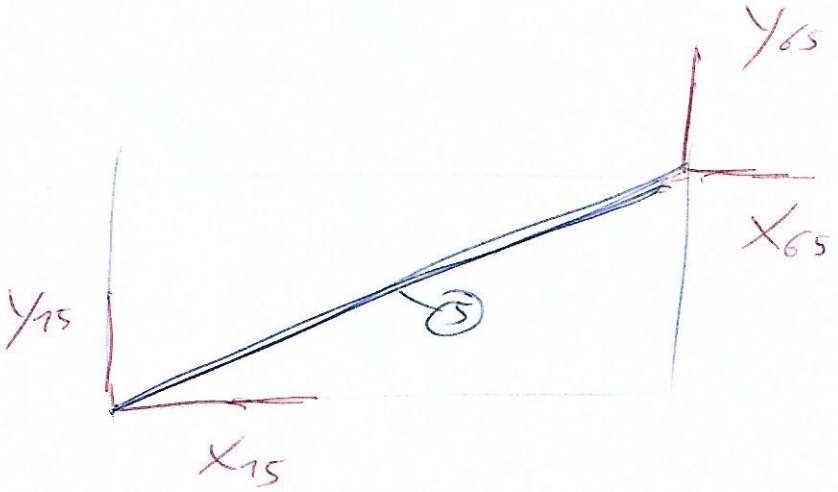
(2)

(Q1 Suite) On isole (6) (voir schéma Q1).

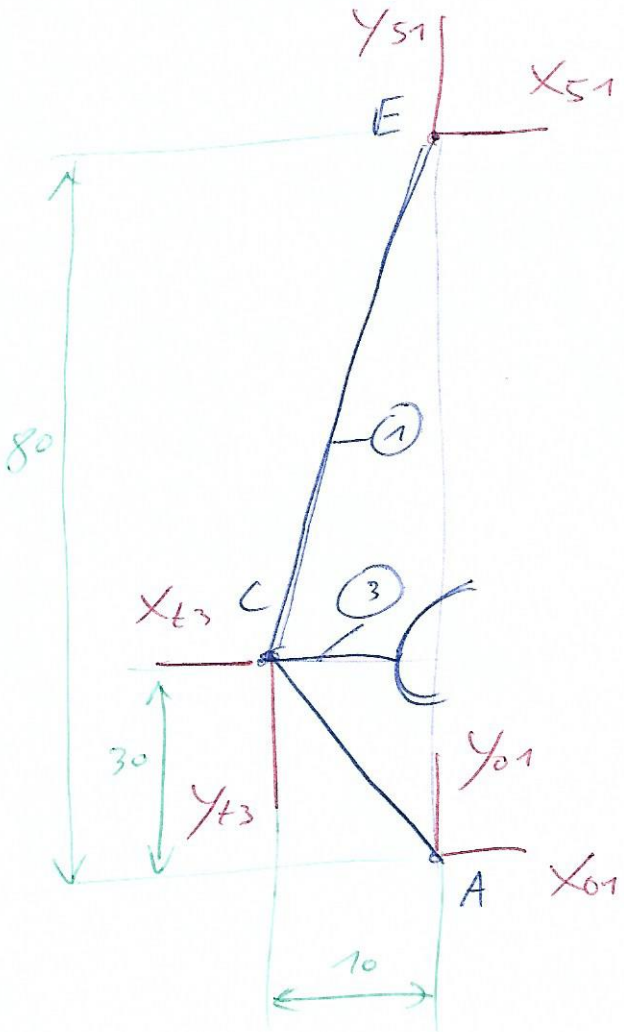
$$\sum \vec{M}(F) = \vec{0} \Longrightarrow -25F - 10X_{56} = 0$$

$$X_{56} = 2{,}5F$$

On isole (5)



On isole (1+3)



$$\sum \vec{M}(A) = \vec{0} \qquad 0{,}5$$

$$-80X_{51} + 30X_{t3} + 10f.X_{t3} = 0$$

$$-80 \times 2{,}5F + 35f.X_{t3} = 0$$

$$\frac{X_{t3}}{F} = \frac{100}{17}$$

(Q2) $C_{frein} = -f(X_{t4} + X_{t3}) \times 35$