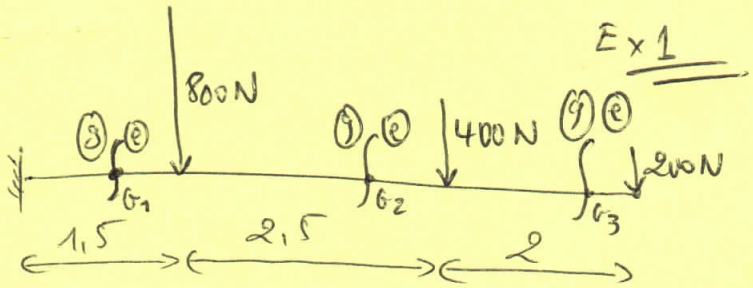
Ex 1

DS 1 Ne21a

2016 - 2017



$$\{\tau_{coh}\}_{G_1} = \begin{cases} 0 \\ -800-400-200 = -1400\ N \\ -800\cdot(1,5-x) - 400\cdot(4-x) - 200\cdot(6-x) = -1200 - 1600 - 1200 + (800+400+200)\cdot x \end{cases}$$

$$\{\tau_{coh}\}_{\substack{G_1(x,0,0) \\ 0<x<1,5}} = \begin{cases} 0 \\ -1400\ N \\ -4000 + 1400\cdot x \end{cases}$$

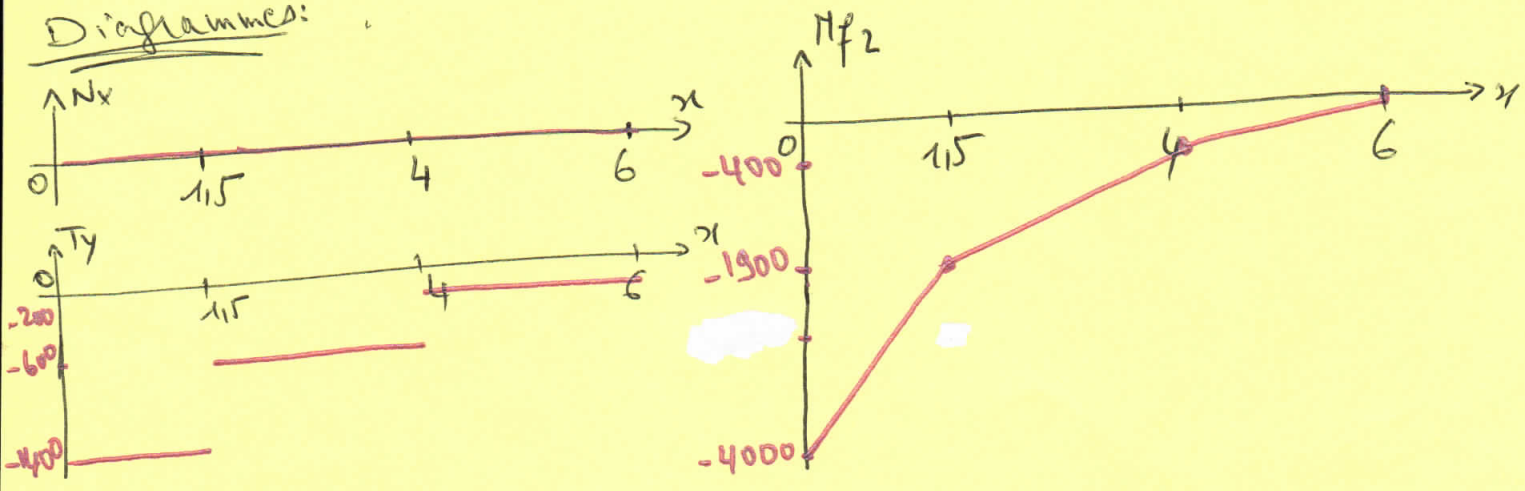
$$\{\tau_{coh}\}_{G_2} = \begin{cases} 0 \\ -600\ N \\ -400\cdot(4-x) - 200(6-x) = -1600 - 1200 + (400+200)\cdot x \end{cases}$$

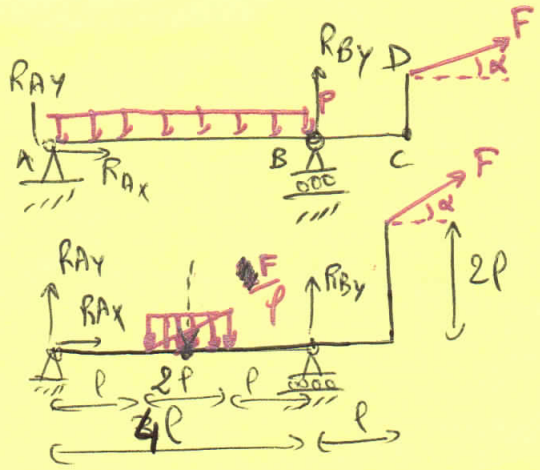
$$\{\tau_{coh}\}_{\substack{G_2(x,0,0) \\ 1,5<x<4}} = \begin{cases} 0 \\ -600\ N \\ -2800 + 600\cdot x \end{cases}$$

$$\{\tau_{coh}\}_{G_3} = \begin{cases} 0 \\ -200 \\ -200\cdot(6-x) = -1200 + 200\cdot x \end{cases}$$

$$\{\tau_{coh}\}_{\substack{G_3(x,0,0) \\ 4<x<6}} = \begin{cases} 0 \\ -200\ N \\ -1200 + 200\cdot x \end{cases}$$

Diagrammes:





$R_{Ax} + F\cos\alpha = 0$

$R_{Ay} + R_{By} - p\ell = 0$

Ex2

(1) $R_{Ax} + F\cos\alpha = 0$

(1) $R_{Ay} + R_{By} - \frac{F}{\ell}\cdot 2\ell + F\sin\alpha = 0.$

(2) $R_{By}\cdot 4\ell - \frac{F}{\ell}\cdot 2\ell\cdot 2\ell - F\cos\alpha\cdot 2\ell + F\sin\alpha\cdot 5\ell = 0$

$R_{By} = \dfrac{F\cos\alpha\cdot 2\ell - F\sin\alpha\cdot 5\ell + 4F\ell}{4\ell}$

$R_{By} = \dfrac{(2\cos\alpha - 5\sin\alpha + 4)F}{4}$ ← $R_{Ay} = \dfrac{F\ell\sin\alpha + 4F\ell - F\cos\alpha\cdot 2\ell}{4\ell}$

(2)

AN: $R_{By} = \dfrac{2\cos 40° - 5\sin 40° + 4}{4}\cdot 50$

$R_{By} \sim 29\ N.$

$R_{Ay} = 250 - 50\sin 40 - 29$

$R_{Ay} \sim 38{,}8\ N$

$R_{Ax} = -50\cos 40$

$R_{Ax} \sim -38{,}3\ N$

(2)

$F = 50\ N\ ;\ \ell = 50\ cm\ ;\ \alpha = 40°$

$\alpha = 45°$

$R_{By} = 23{,}5\ N$

$R_{Ay} = 41{,}2\ N$

$R_{Ax} = -35{,}3\ N.$