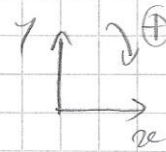


Tracer les diagrammes de sollicitations internes
ex 4.



$$q = 200 \text{ N/m}$$

$$L = 3 \text{ m}$$

- Recherche des réactions aux appuis

PFS.

$$\sum F_x = 0$$

$$\sum F_y = 0$$

$$R_{Ax} = 0$$

$$R_{Ay} - q \times \frac{L}{2} = 0$$

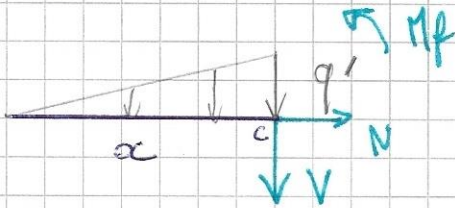
$$R_{Ay} = \frac{qL}{2} = \underline{300 \text{ N}}$$

$$\sum M_A = 0$$

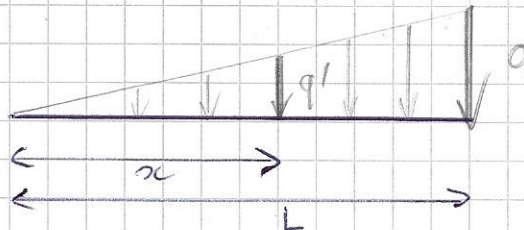
$$M_A - \frac{qL}{2} \times \frac{L}{3} = 0$$

$$M_A = \frac{qL^2}{6} = \underline{300 \text{ Nm}}$$

- "On coupe" à la longueur x .



Calcul de q' :



$$q = 200 \text{ N/m}$$

$$L = 3 \text{ m}$$

$$\frac{q'}{q} = \frac{x}{L}$$

(Thales)

$$q' = q \frac{x}{L} = \underline{\underline{\frac{200}{3} x}}$$

$$\sum F_x = 0$$

$$\sum F_y = 0$$

$$N = 0$$

→ Effort normal nul → pas la peine de tracer le diag.

$$-V - q \frac{x}{L} \times \frac{x}{2} = 0$$

$$V = \underline{\underline{-\frac{q}{2L} x^2}} = 33,3 x^2$$

$$\sum M_c = 0$$

$$-M_f - \frac{q}{2L} x^2 \times \frac{x}{3} = 0$$

$$M_f = \underline{\underline{-\frac{q}{6L} x^3}} = 11,1 x^3$$

