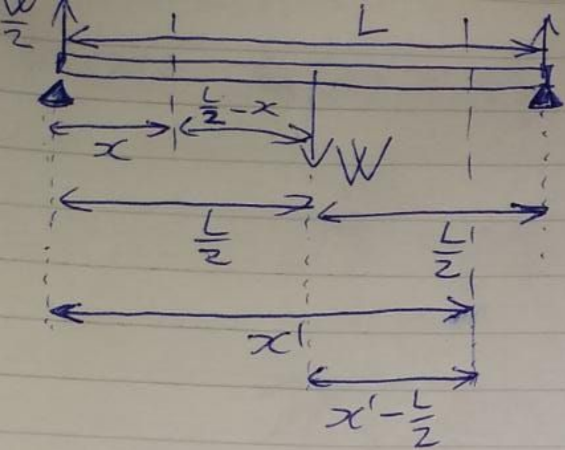


W ACTING DOWNWARDS

W/2 ACTING UPWARDS THAT'S WHY

$$\underbrace{W\left(\frac{L}{2}-x\right)}_{\text{W ACTING DOWNWARDS}}-\frac{W}{2}(L-x)=-\frac{W}{2}x$$

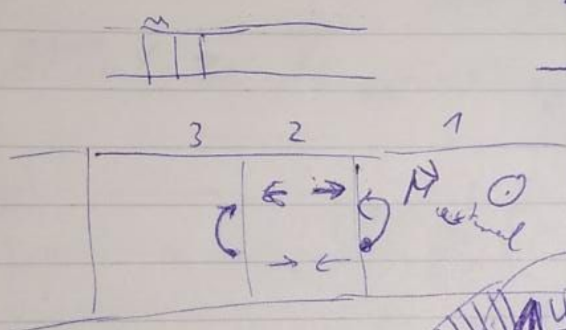
$$\cancel{-\frac{W}{2}\left(x'-\frac{L}{2}\right)}$$

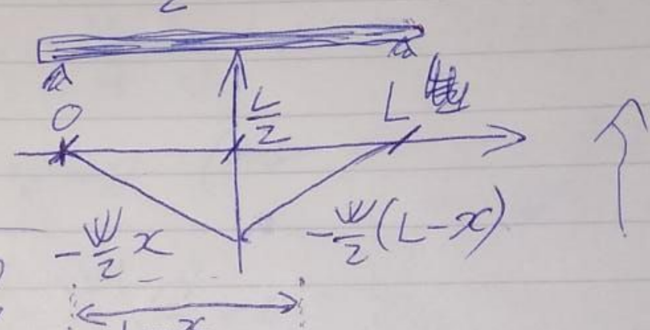
$$-\frac{W}{2}x'+W\left(x'-\frac{L}{2}\right)=W\left(\frac{x'}{2}-\frac{L}{2}\right)$$

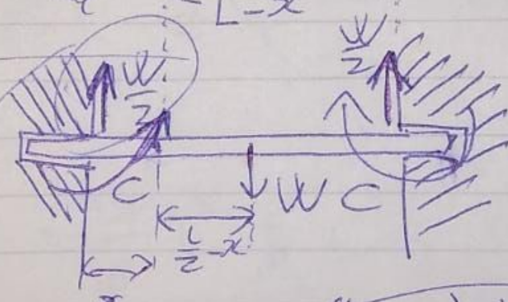
$$\cancel{-\frac{W}{2}\left(L-x\right)}$$

$$=-\frac{W}{2}\left(L-x'\right)$$

$$B=\begin{cases}-\dfrac{W}{2}x & \text{FOR } x<\dfrac{L}{2}\\[2ex] -\dfrac{W}{2}(L-x) & \text{FOR } x>\dfrac{L}{2}\end{cases}$$

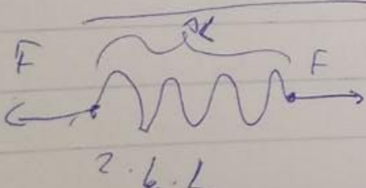






$$\cancel{W\left(\frac{L}{2}-x\right)-\frac{W}{2}(L-x)}$$

$$\frac{W}{2}$$

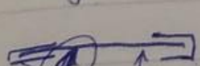


$$B=-\frac{W}{2}x+C$$

alapból így lenne:

ezt tekeri be a fal ilyenre:

ez a $\frac{W}{2}$ meg clockwise



ez anticlockwise forgatja a rudat.

ezért az ellentétes előjel itt

RECALL: $y'' = \frac{M}{EI} = \frac{1}{EI}\left(-\frac{w}{2}x + C\right)$ /integrate

$$y' = \frac{1}{EI}\left(-\frac{w}{2}\frac{x^2}{2} + Cx\right) + D$$ /integrate

~~$y = 0 = \frac{1}{EI}(-w$~~

~~most flat at mid~~

APPLY BC AT $x = \frac{L}{2}$: $y'(x = \frac{L}{2}) = 0$

$$0 = \frac{1}{EI}\left(-\frac{w}{4}\left(\frac{L}{2}\right)^2 + C\frac{L}{2}\right) + D$$

APPLY BC AT $x = 0$: $y' = 0$ (mea be van boqua a falla)

$$0 = \frac{1}{EI}\left(-\frac{w}{2}\frac{0^2}{2} + C \cdot 0\right) + D \Rightarrow D = 0$$

$\Rightarrow 0$

$$\Rightarrow -\frac{w}{16}L^2 + C\frac{L}{2} = 0$$

$$-\frac{w}{8}L + C = 0$$

$$\boxed{C = \frac{wL}{8}}$$