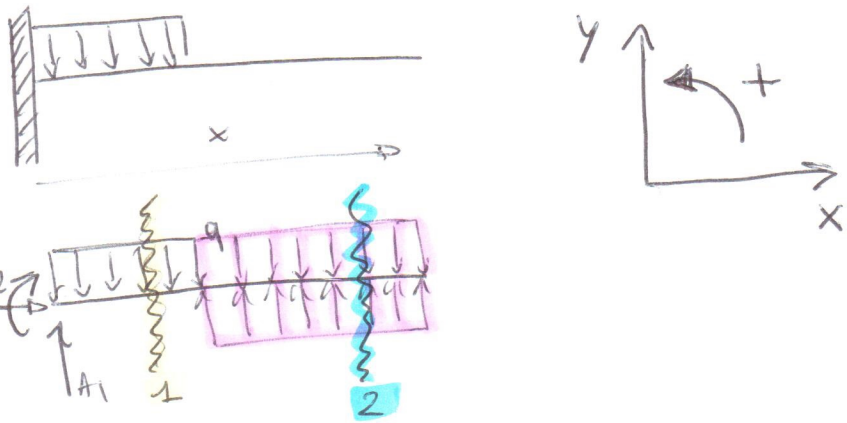


Forces and moments:

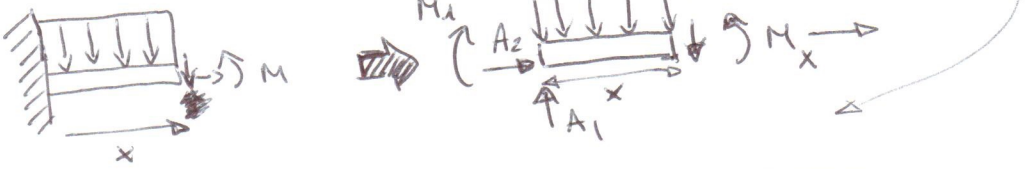
$\Sigma F_x = 0$: $A_2 = 0$

$\Sigma F_y = 0$: $A_1 - q \cdot a = 0 \Rightarrow A_1 = q \cdot a$

$\Sigma M_A = 0$: $-M_1 - q \cdot a \cdot \frac{a}{2} = 0 \Rightarrow M_1 = -\frac{q \cdot a^2}{2}$ anticlockwise is positive

elastic line:

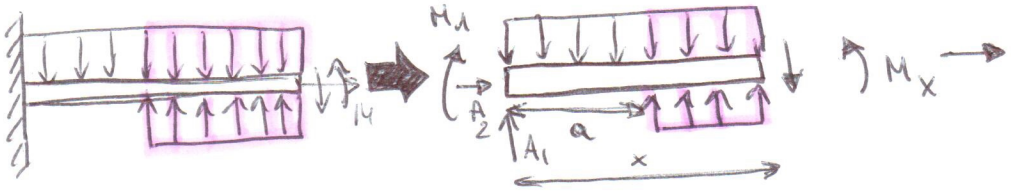
1:



$$M(x) = M_1 + A_1 \cdot x - q \cdot x \frac{x}{2}$$

$$M(x) = -\frac{q \cdot a^2}{2} + q \cdot a - \frac{q \cdot x^2}{2}$$

2:



$$M(x) = -\frac{q \cdot a^2}{2} + q \cdot a - \frac{q \cdot x^2}{2} + \frac{q(x-a)^2}{2} \delta(x-a)$$