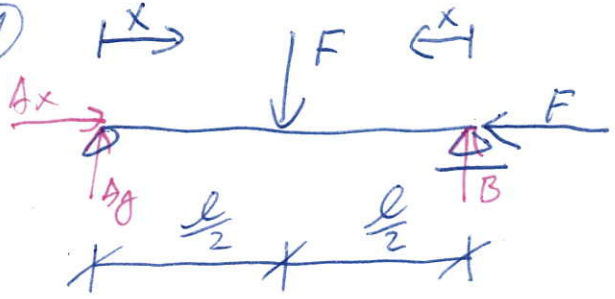
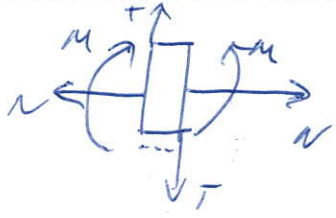
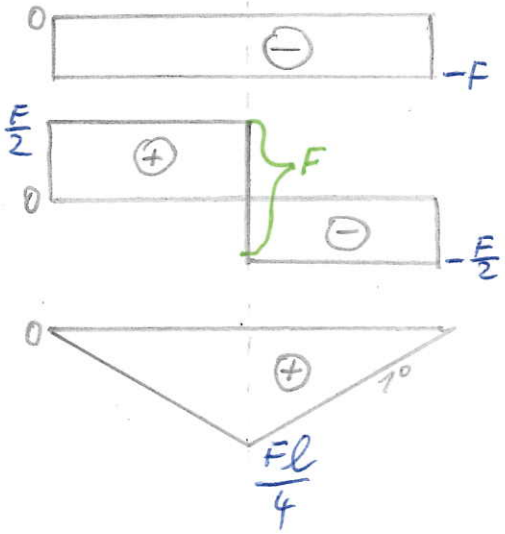
① 


$$\left|\begin{array}{l} A_y = B = \frac{F}{2} \\ A_x = F \end{array}\right.$$




$x \in \langle 0; \frac{l}{2})$

$N(x) = -A_x = -F$

$T(x) = A_y = \frac{F}{2}$

$\| T(0) = \frac{F}{2} ; T(\frac{l}{2}) = \frac{F}{2}$

$M(x) = A_y \cdot x = \frac{F}{2} \cdot x$

$\| M(0) = 0$

$M(\frac{l}{2}) = \frac{Fl}{4}$

$x' \in \langle 0; \frac{l}{2})$

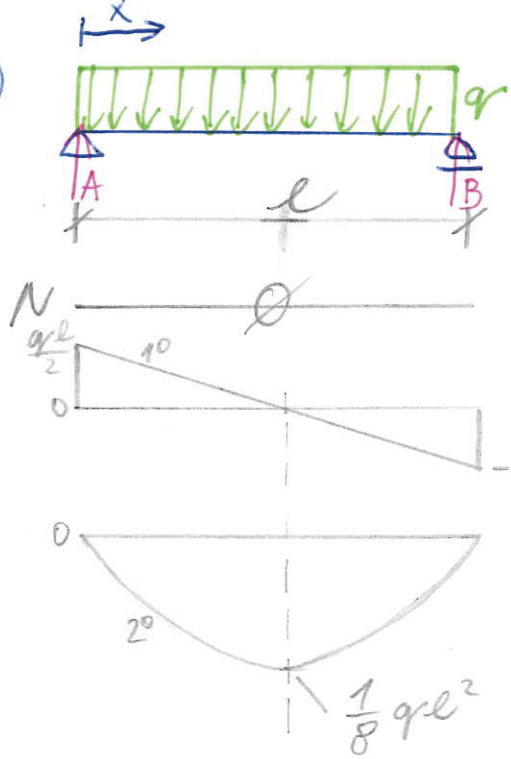
$N(x') = -F$

$T(x') = -B = -\frac{F}{2}$

$M(x') = B \cdot x' = \frac{F}{2} \cdot x'$

$\| M(0) = 0$

$M(\frac{l}{2}) = \frac{Fl}{4}$

② 


$A = B = \frac{ql}{2}$

$x \in \langle 0; l)$

$N(x) = 0$

$T(x) = \frac{ql}{2} - qx ; T(0) = \frac{ql}{2} ; T(l) = -\frac{ql}{2}$

$M(x) = \frac{ql}{2} \cdot x - qx\frac{x}{2}$

$\| M(0) = 0$

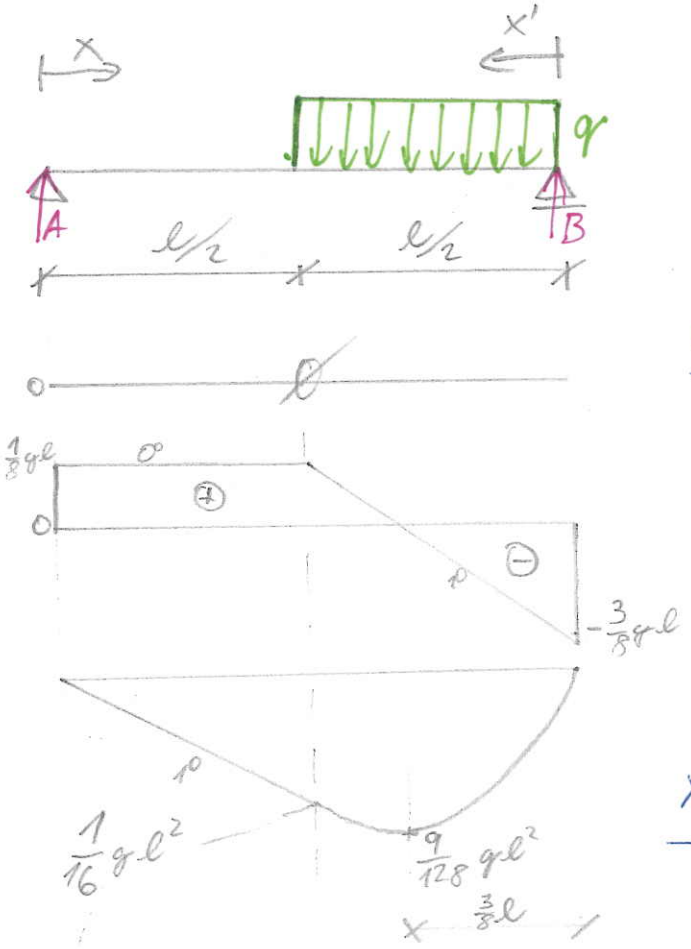
$M(l) = 0$

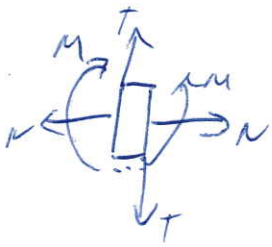
MAXIMÁLNÍ MOMENT

$M(x = \frac{l}{2}) = \frac{ql}{2} \cdot \frac{l}{2} - q\frac{l}{2} \cdot \frac{l}{4} =$

$= \frac{1}{8} ql^2$

③




$A = \frac{1}{8} ql$

$B = \frac{3}{8} ql$

$x \in \langle 0; \frac{l}{2})$

$N(x) = 0$

$T(x) = A = \frac{1}{8} ql$

$M(x) = A \cdot x = \frac{1}{8} qlx$

$M(0) = 0$

$M(\frac{l}{2}) = \frac{1}{8} ql \frac{l}{2} = \frac{1}{16} ql^2$

$x' \in \langle 0; \frac{l}{2})$

$N(x') = 0$

$T(x') = -B + qx'$

$T(0) = -\frac{3}{8} ql$

$T(\frac{l}{2}) = \frac{1}{8} ql$

$M(x') = B \cdot x' - qx' \cdot \frac{x'}{2}$

$M(0) = 0$

$M(\frac{l}{2}) = \frac{1}{16} ql^2$

MAXIMÁLNÍ MOMENT

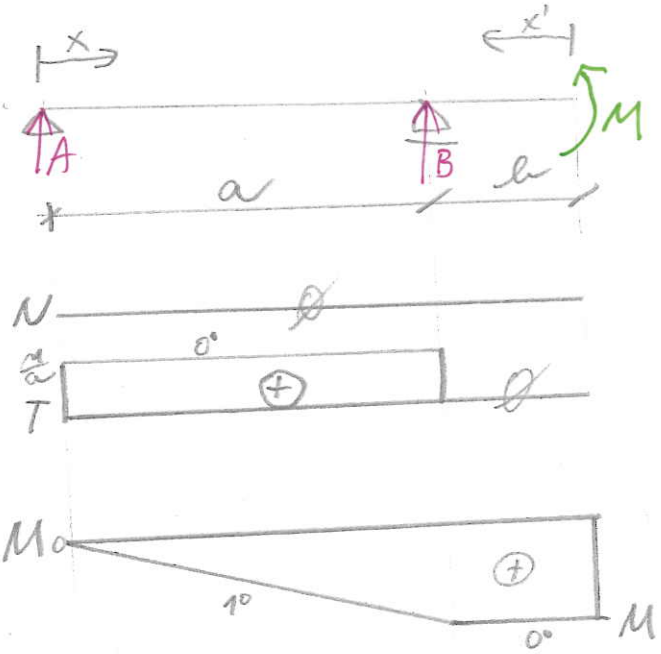
$T(x_M) = 0 \Rightarrow -\frac{3}{8} ql + q x_M = 0$

$x_M = \frac{3}{8} l$

$M^{(3/8)}_{MAX} = \frac{3}{8} ql \cdot \frac{3}{8} l - q \cdot \frac{3}{8} l \frac{\frac{3}{8} l}{2} =$

$= \frac{9}{128} ql^2$

④




$A = \frac{M}{a}$

$B = -\frac{M}{a}$

$x \in \langle 0; a)$

$N(x) = 0$

$T(x) = A = \frac{M}{a}$

$M(x) = A \cdot x = \frac{M}{a} \cdot x$

$M(0) = 0$

$M(a) = M$

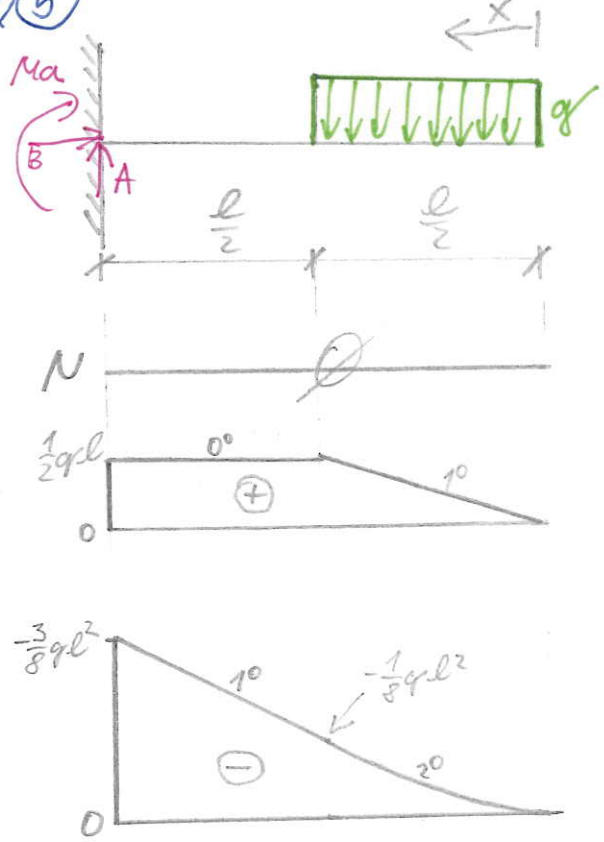
$x' \in \langle 0; b)$

$N(x') = 0$

$T(x') = 0$

$M(x') = M$

## ~~4~~ 5




$B = 0$

$A = \frac{1}{2} q l$

$Ma = -\frac{3}{8} q l^2$

$x \in \langle 0; \frac{l}{2} )$

$N(x) = 0$

$T(x) = qx$

$T(0) = 0 \; ; \; T(\frac{l}{2}) = \frac{1}{2} q l$

$M(x) = -\frac{1}{2} q x^2$

$M(0) = 0$

$M(\frac{l}{2}) = -\frac{1}{8} q l^2$

$x \in \langle \frac{l}{2}; l )$

$N(x) = 0$

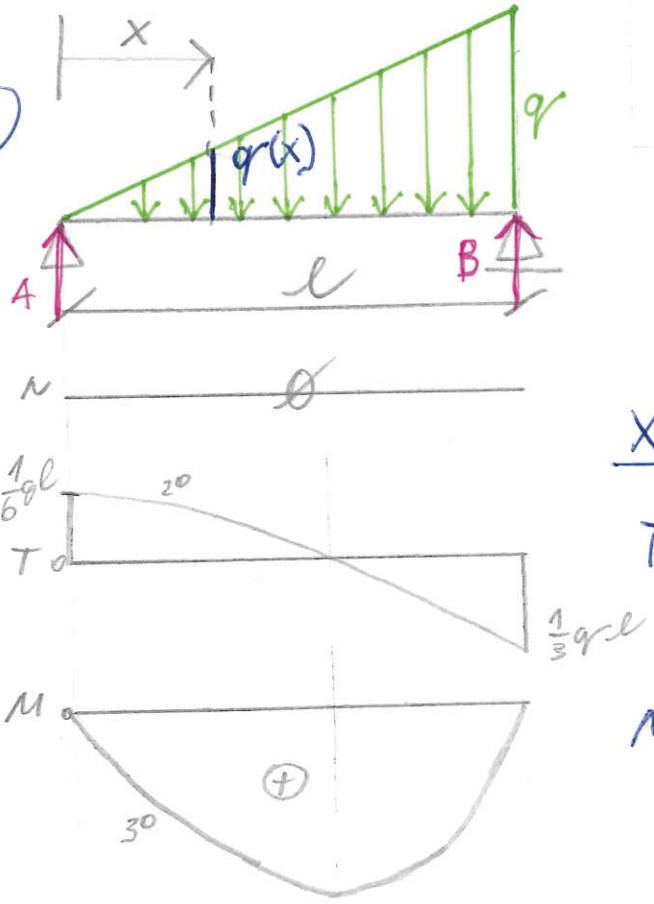
$T(x) = \frac{1}{2} q l$

$M(x) = -\frac{1}{2} q l (x - \frac{1}{4} l)$

$M(\frac{l}{2}) = -\frac{1}{8} q l^2$

$M(l) = -\frac{3}{8} q l^2$

## 6




$A = \frac{1}{6} q l \; ; \; B = \frac{1}{3} q l$

$\frac{q(x)}{x} = \frac{q}{l} \Rightarrow q(x) = x \frac{q}{l}$

$x \in \langle 0; l )$ $\quad (N(x) = 0)$

$T(x) = A - \frac{1}{2} \frac{q}{l} x^2$

$T(0) = \frac{1}{6} q l$

$T(l) = -\frac{1}{3} q l$

$M(x) = A \cdot x - \frac{1}{2} \frac{q}{l} x^2 \cdot \frac{1}{3} x$

$M(0) = 0$

$M(l) = 0$

MAXIMÁLNÍ MOMENT

$T(x_M) = 0 \; ; \; \frac{1}{6} q l - \frac{1}{2} \frac{q}{l} x_M^2 = 0$

$x_M = l \cdot \frac{\sqrt{3}}{3}$

$M_{max}(x_M = l \frac{\sqrt{3}}{3}) = \ldots$