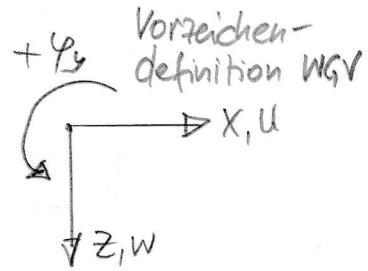
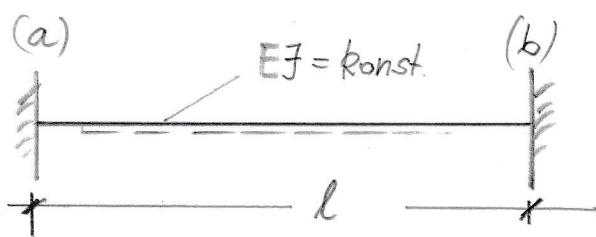
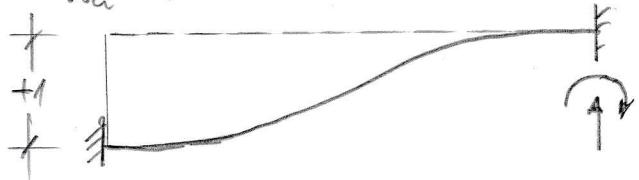


ARBEITBLATT

1



$$w_a = 1$$



(M)

$$-\frac{6EJ}{l^2}$$

$$+\frac{12EJ}{l^3}$$

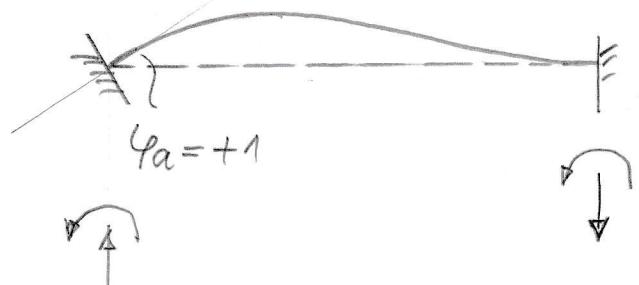
(V)

$$-\frac{6EJ}{l^2}$$

$$-\frac{12EJ}{l^3}$$



$$\varphi_a = +1$$



(M)

$$+\frac{2EJ}{l}$$

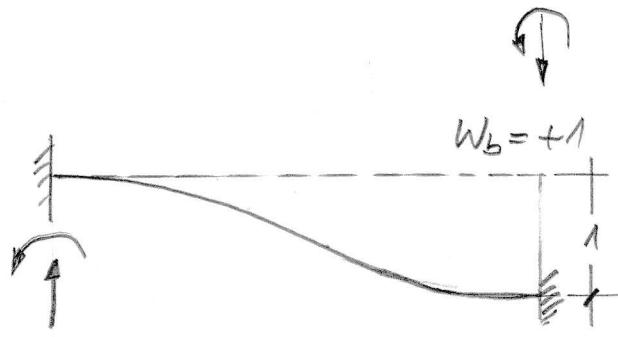
$$+\frac{4EJ}{l}$$

(V)

$$-\frac{6EJ}{l^2} \quad +\frac{6EJ}{l^2}$$



$$w_b = +1$$



(M)

$$+\frac{6EJ}{l^2}$$

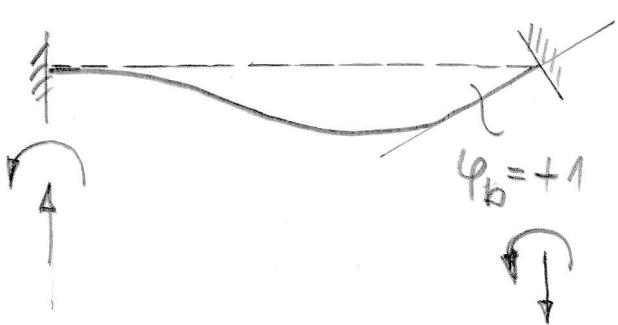
$$+\frac{6EJ}{l^2}$$

(V)

$$-\frac{12EJ}{l^3} \quad +\frac{12EJ}{l^3}$$



$$\varphi_b = +1$$



(M)

$$+\frac{2EJ}{l}$$

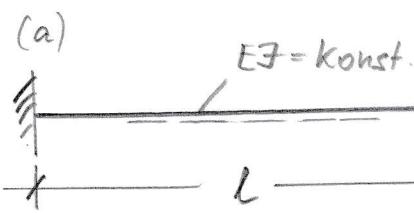
$$+\frac{4EJ}{l}$$

(V)

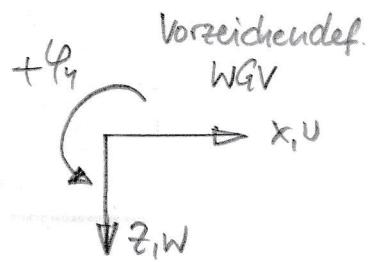
$$-\frac{6EJ}{l^2} \quad +\frac{6EJ}{l^2}$$

ARBEITSBLATT

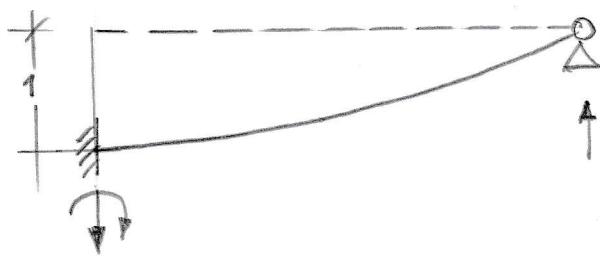
(2)



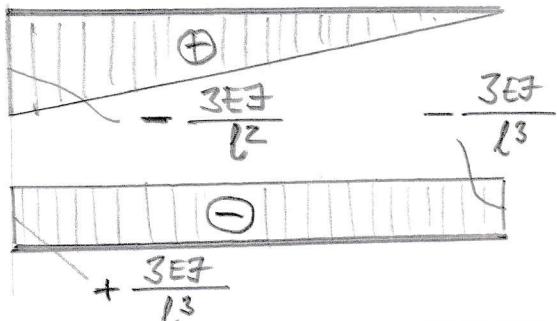
(b)



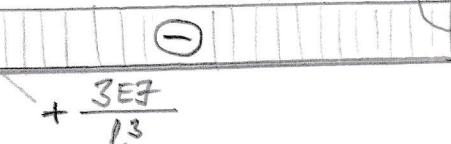
$$w_a = +1$$



(H)



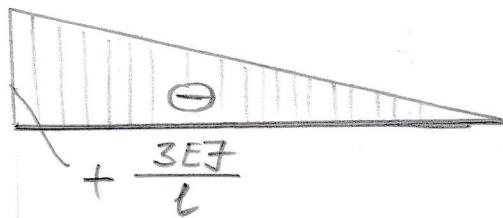
(V)



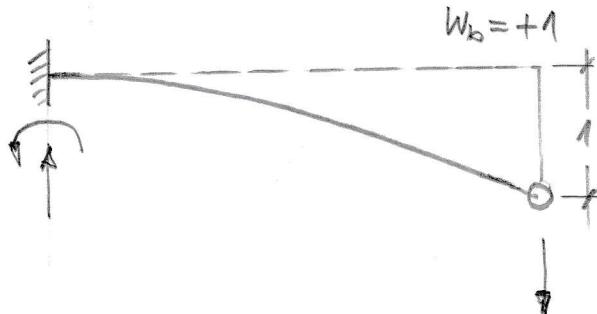
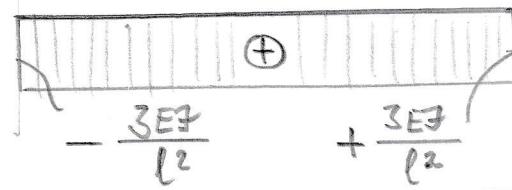
$$\varphi_a = +1$$



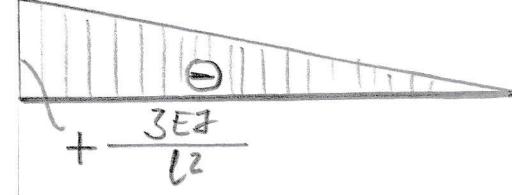
(H)



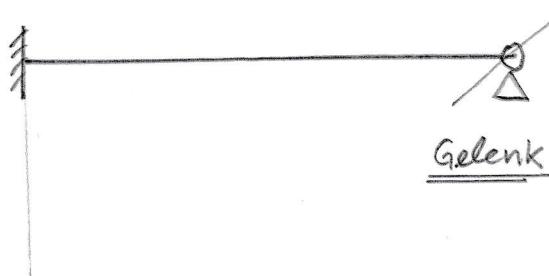
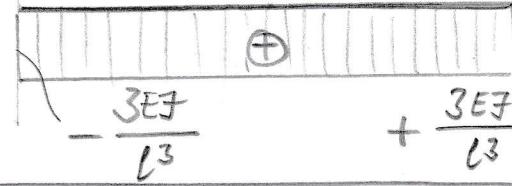
(V)



(H)



(V)



$$(H) = 0$$

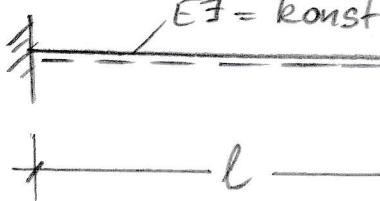
$$(V) = 0$$

ARBEITSBLATT:

Z.1

(a)

$EJ = \text{konst.}$



(b)



Querkraftgelenk

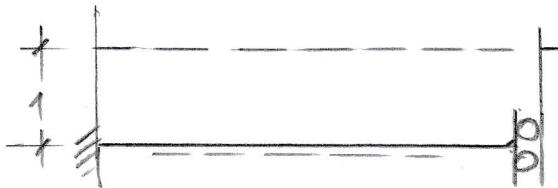
$+q_y$

x, u

Vorzeichendef.
WGV

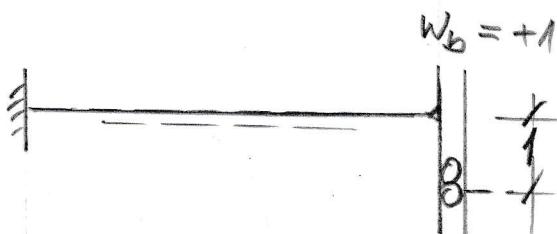
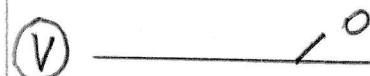
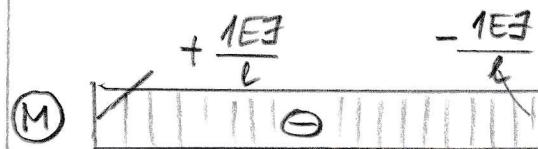
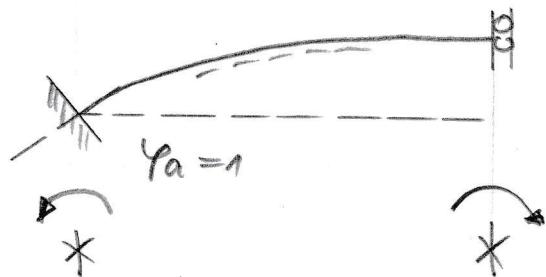
$z_{1,W}$

$w_a = 1$



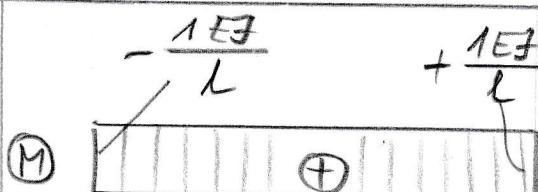
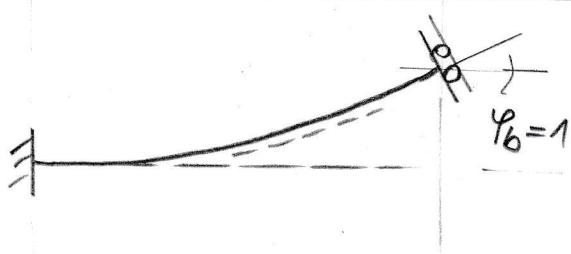
$$\textcircled{M} = 0$$

$$\textcircled{V} = 0$$



$$\textcircled{M} = 0$$

$$\textcircled{V} = 0$$



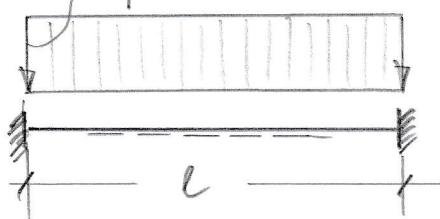
ARBEITSBLATT

(3)

Stabendchnittgrößen mit Verteilen nach WGV!

(a)

$$q = \text{konst.}$$



(b)

$$+ \frac{q \cdot l^2}{12}$$

$$- \frac{q \cdot l^2}{12}$$

$$q \cdot l^2 / 24$$

(M)

$$- \frac{q \cdot l}{2}$$

(V)



$$q_a$$

$$q_b = 0$$

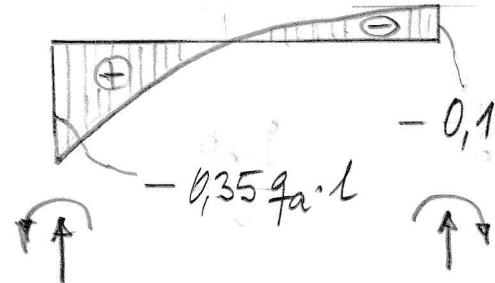
(M)

$$+ \frac{q_a \cdot l^2}{20}$$

$$- \frac{q_a \cdot l^2}{30}$$

(V)

$$- 0,15 \cdot q_a \cdot l$$



$$+ \frac{l}{2} \quad + \frac{l}{2} \quad |$$

$$P$$

(M)

$$+ \frac{P \cdot l}{8}$$

$$- \frac{P \cdot l}{8}$$

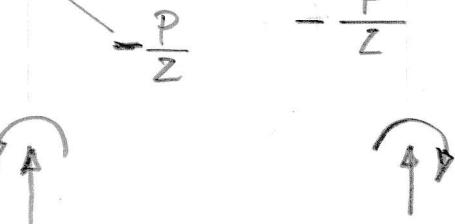
$$q_b$$

$$q_a = 0$$

$$l$$

(V)

$$- \frac{P}{2} \quad - \frac{P}{2}$$



(M)

$$+ \frac{q_b \cdot l^2}{30}$$

P. 3. Ord.

$$- \frac{q_b \cdot l^2}{20}$$

(V)

$$- 0,15 \cdot q_b \cdot l$$

$$\text{Parabel 2. Ord.} - 0,35 \cdot q_b \cdot l$$

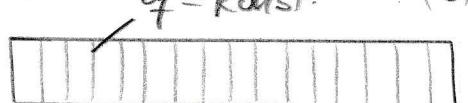


ARBEITSBLATT

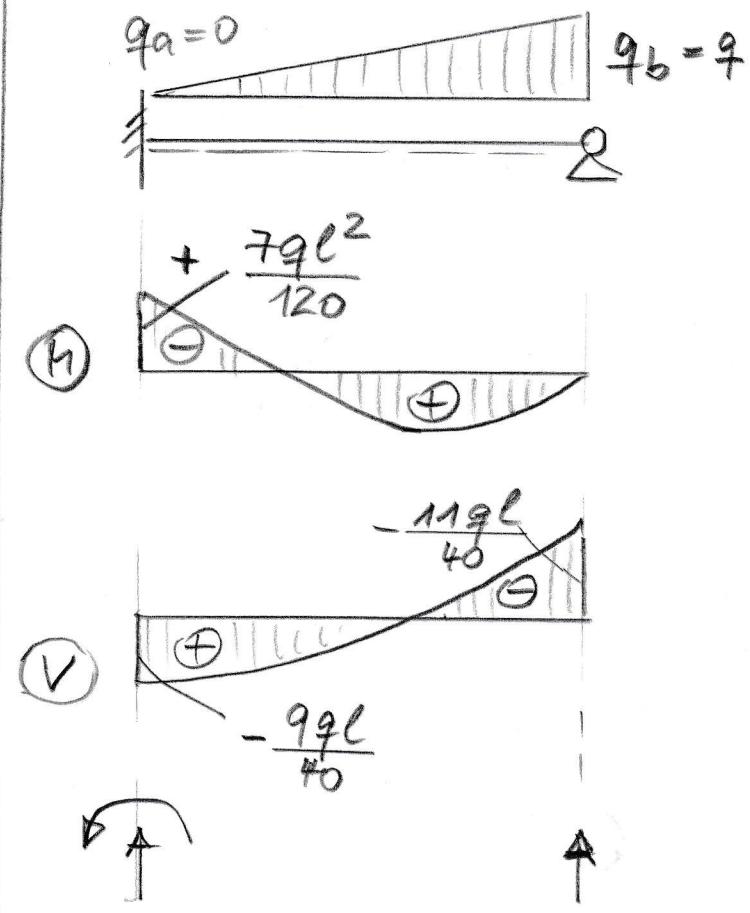
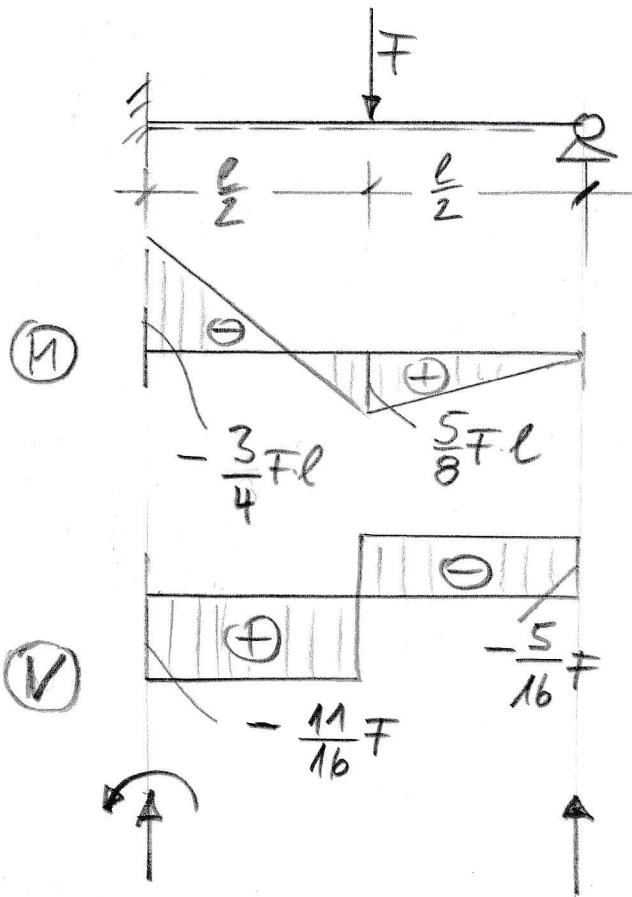
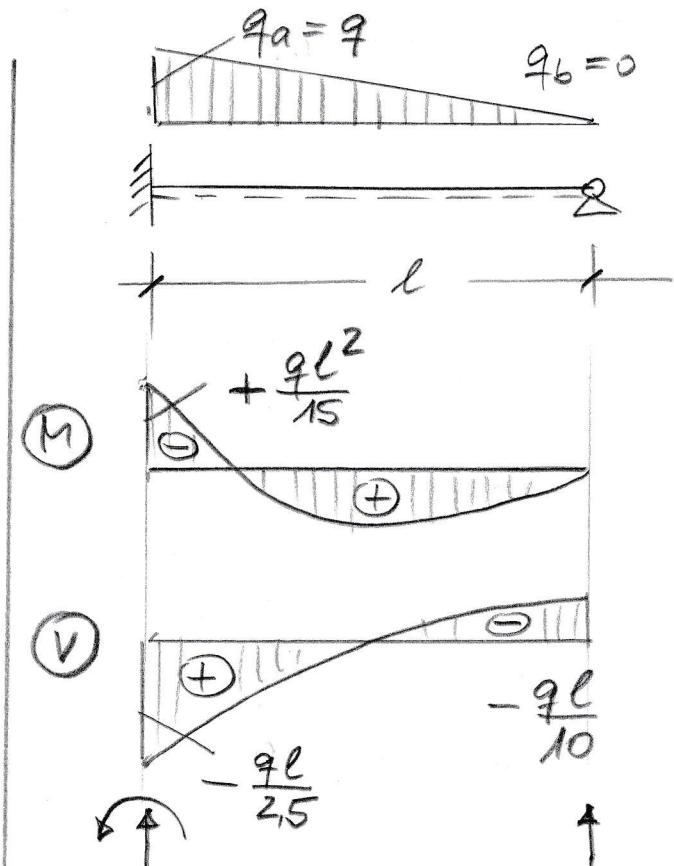
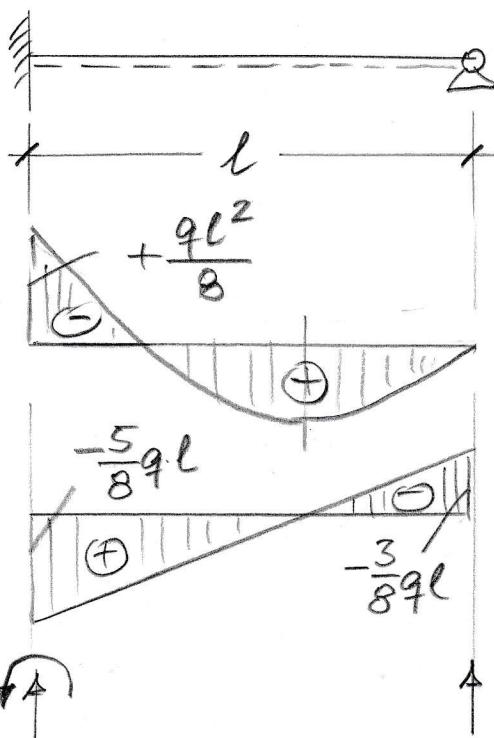
(3.1)

Stabendchnittgrößen mit
Vorzeichen nach WGV !

(a)



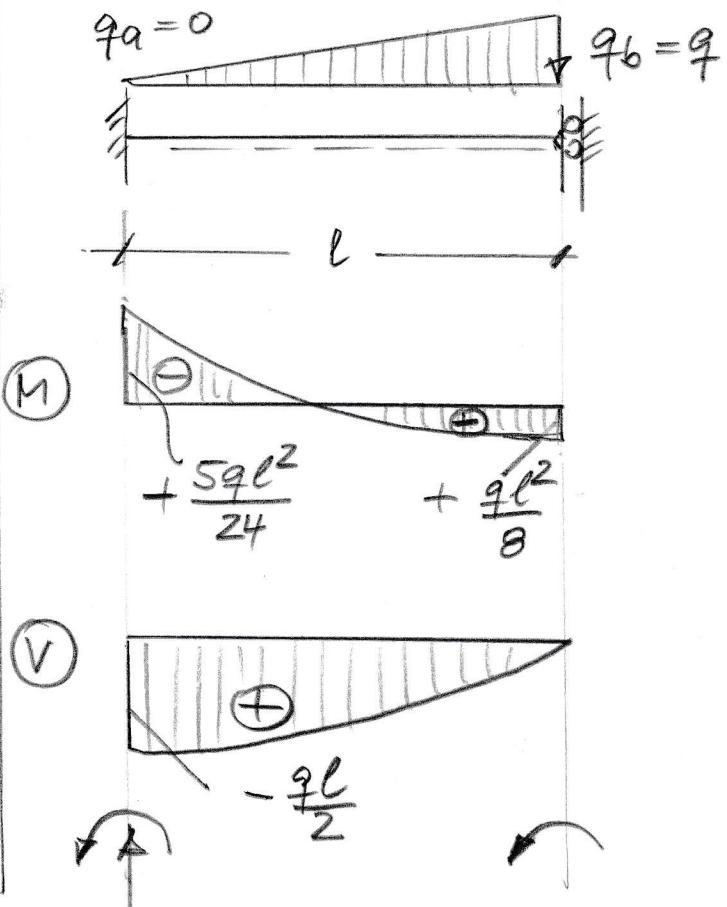
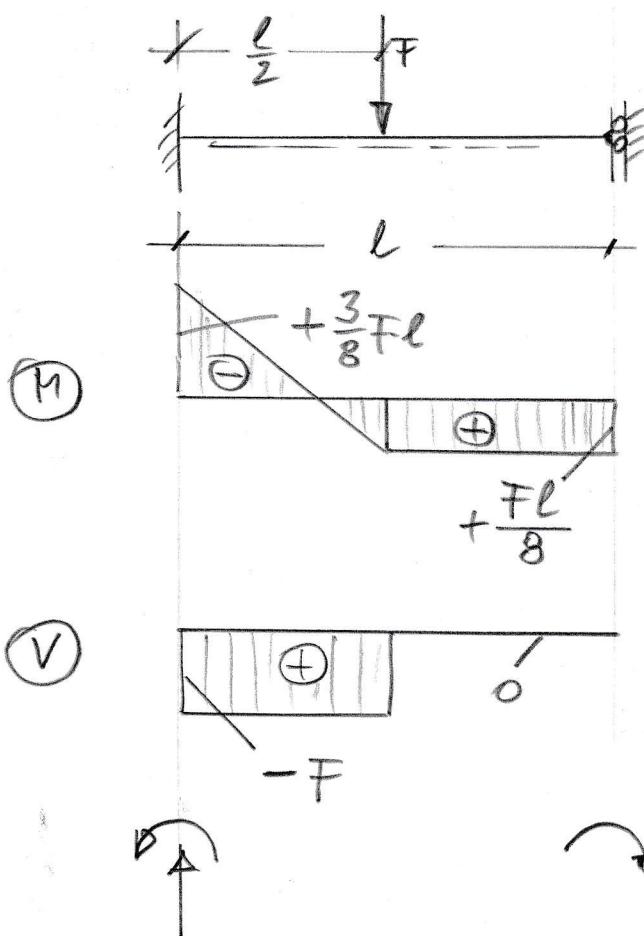
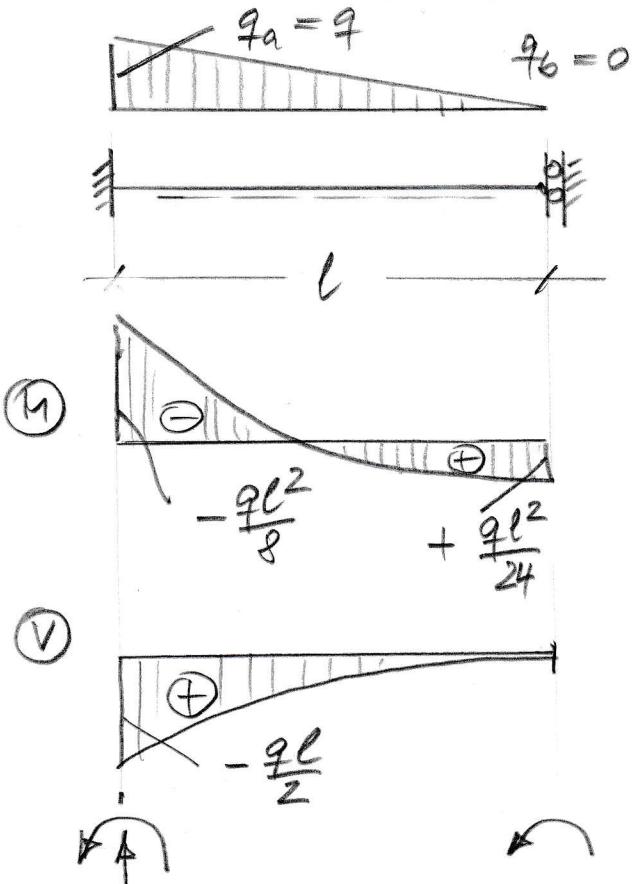
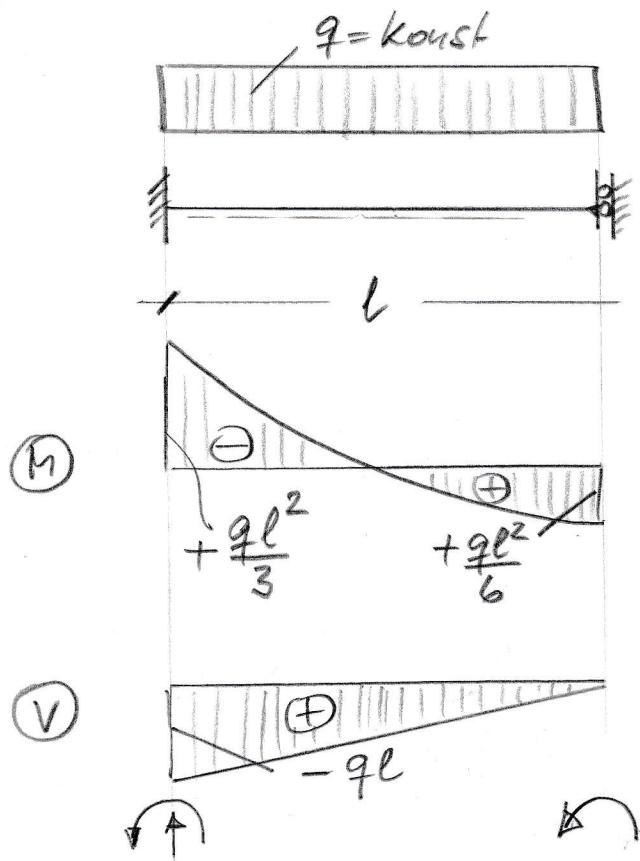
(b)



ARBEITSBLATT

(3,2)

Stabendchnittgrößen mit
Vorzeichen nach WGV



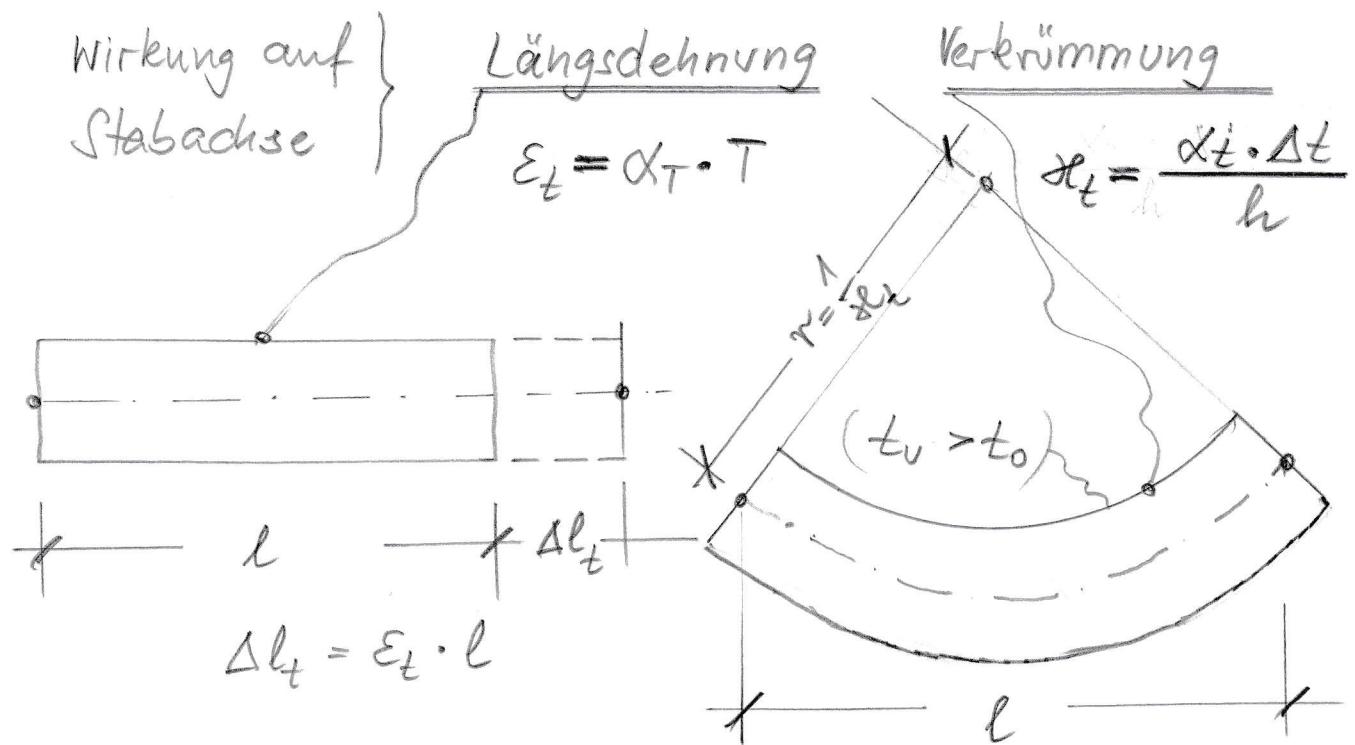
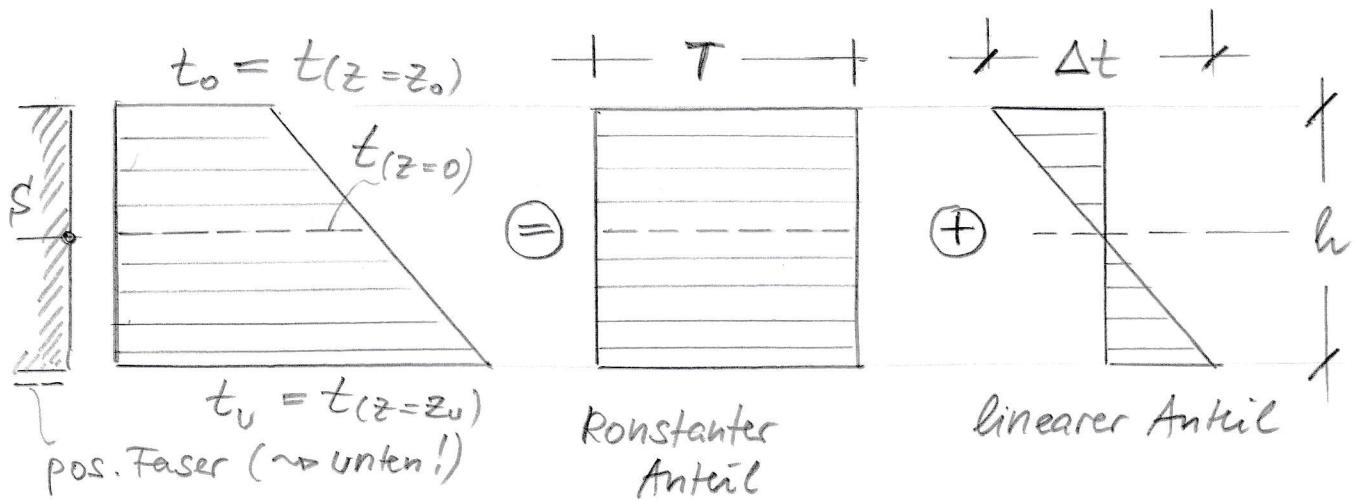
ARBEITSBLATT ④

Temperatureinwirkung

$$T = \frac{t_u + t_o}{2}$$

*)

$$\Delta t = t_u - t_o$$



Generell gilt: t_u und t_o sind Temp.-veränderungen gegenüber dem Bauzustand

t_u und t_o müssen Längenvergängsgerecht eingesetzt werden

α_T = Wärmeausdehnungskoeff.

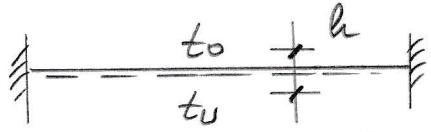
*) gilt nur für Querschnitte mit Schwerachse auf halber Höhe!

ARBEITSBLATT

(5)

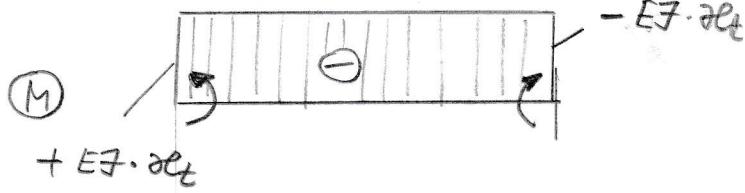
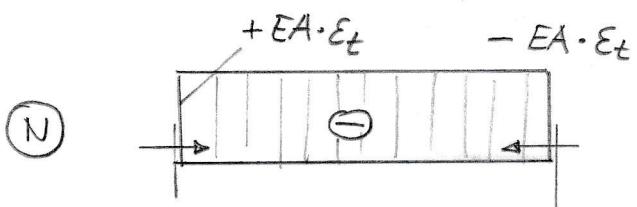
Parameter:

$$EA; EF; \alpha_T; h$$

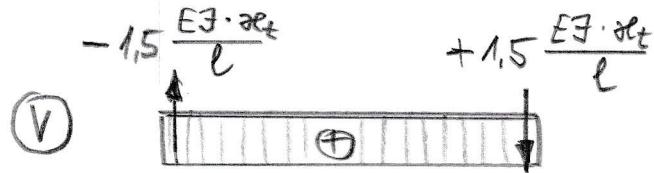
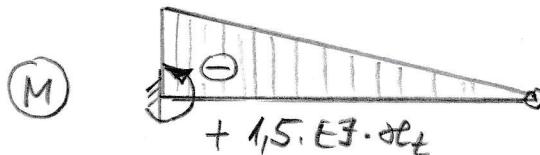
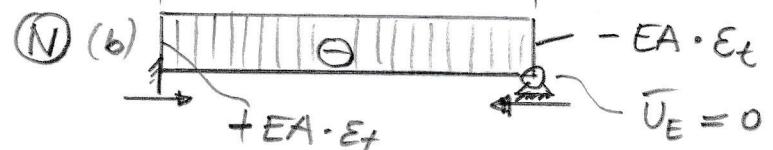
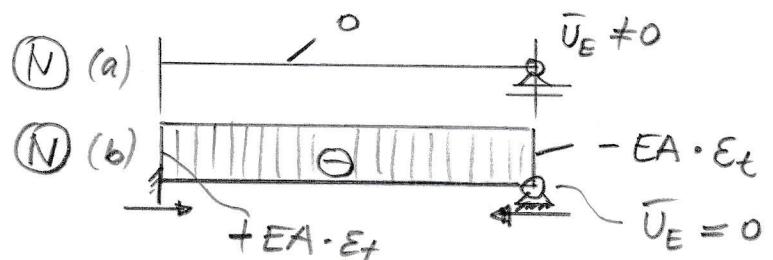
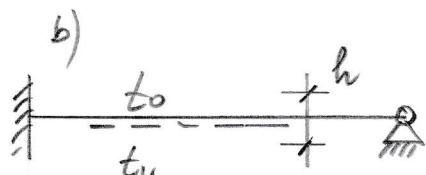
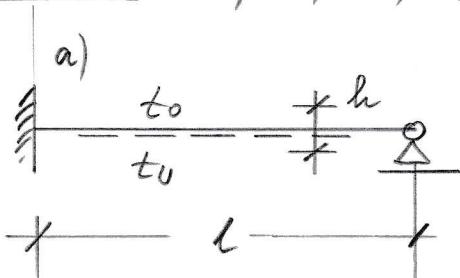


$$\varepsilon_t = \alpha_T \cdot T = \alpha_T \cdot \frac{t_u + t_0}{2}$$

$$\alpha_t = \frac{\alpha_T \cdot \Delta t}{h} = \frac{\alpha_t}{h} (t_u - t_0)$$



Parameter: EA; EF; α_T ; h



Parameter: EA; EF; α_t ; h

