

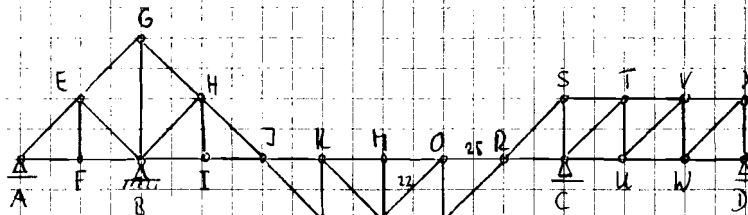
Baustatik I+II Lösung der Fernstudienprüfung

Herbst 04

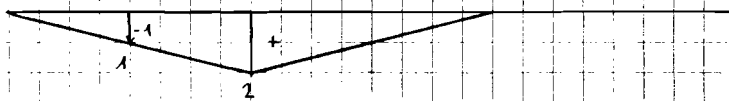
1a) $A_v = -\frac{5}{2}Q$
 $B_v = 4Q$
 $C_v = 4Q$
 $D_v = \frac{Q}{2}$
 $B_H = -2Q$
 $S_{AB} = \frac{\sqrt{2}}{2}Q$

1b) Nullstäbe: $S_3, S_5, S_9, S_{11}, S_{40}$; aus Berechnung: S_{32}, S_{34}

1c)



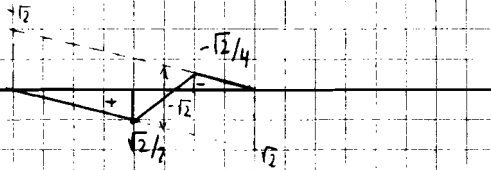
η_{B_v}



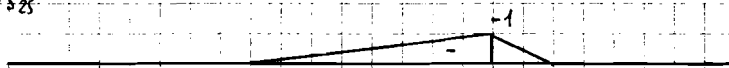
η_{C_v}



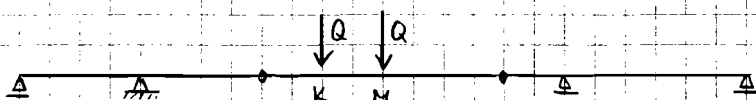
$\eta_{S_{22}}$



$\eta_{S_{25}}$

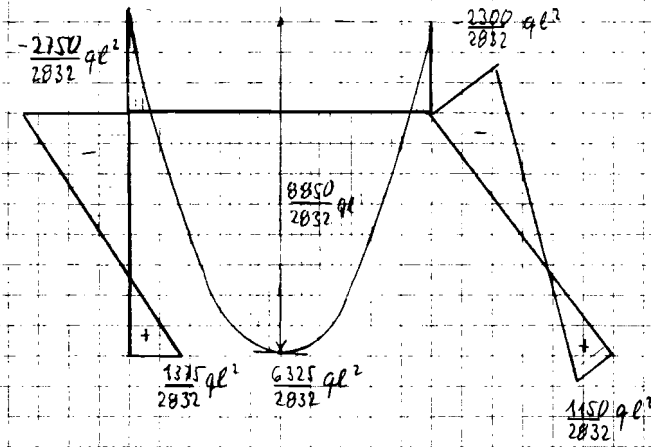


1d)



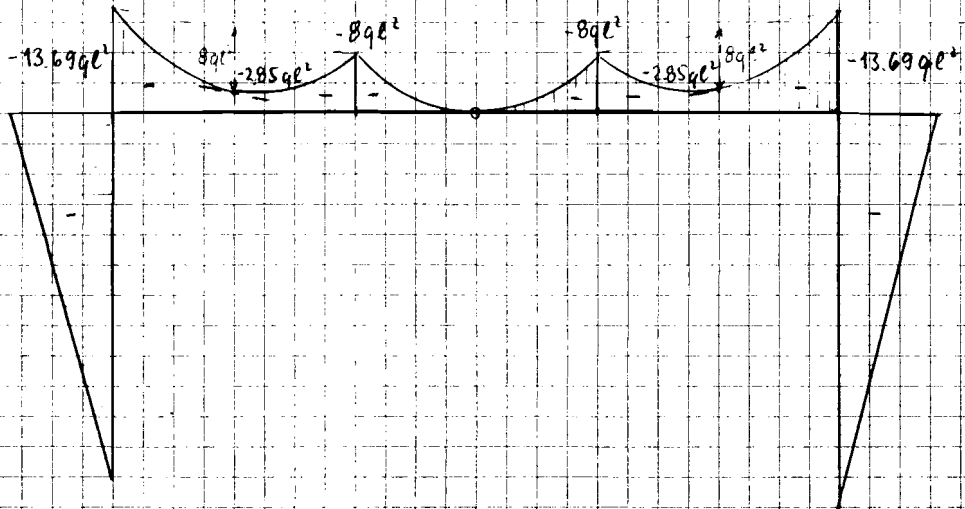
$S_{22_{\text{extrem}}} = \frac{3\sqrt{2}}{4}Q$

2a)

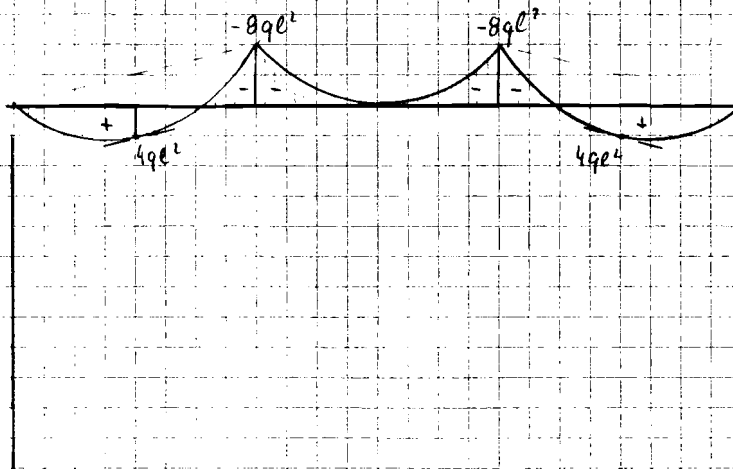


b) $\delta_{3v} = 0$

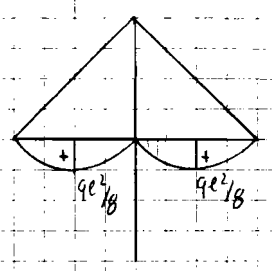
3a)



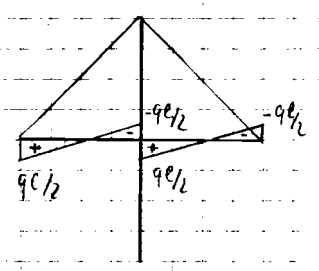
b) $P = 4.5636 ql$



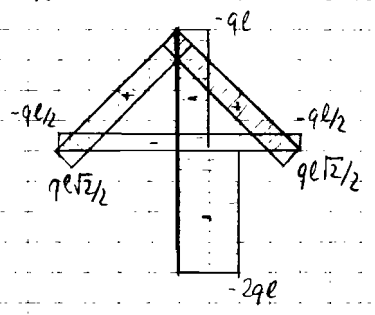
4a) H:



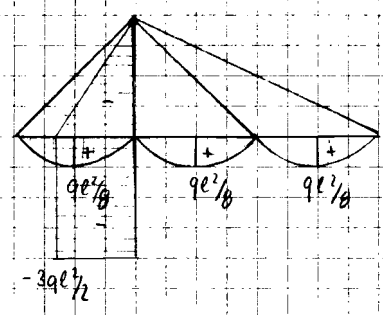
V:



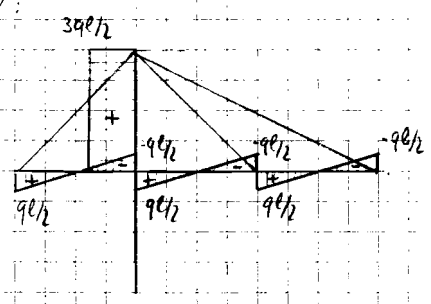
N:



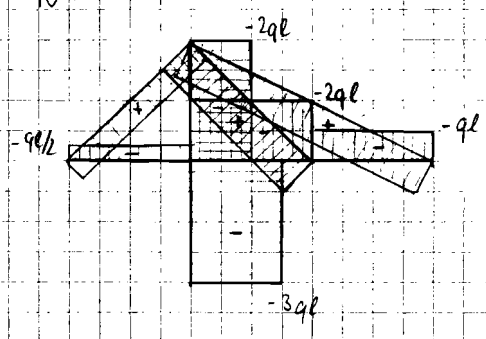
H:



V:

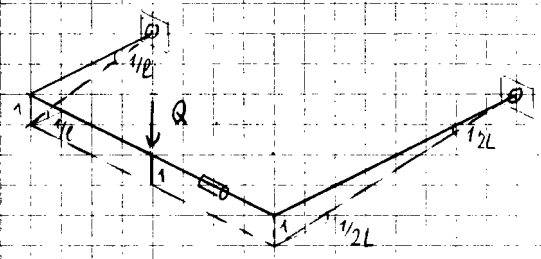


N:

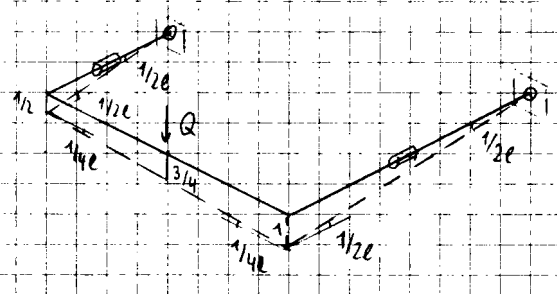


$$b) \delta = \frac{4ql^4}{EI} + \frac{5(5+2)ql^2}{EA}$$

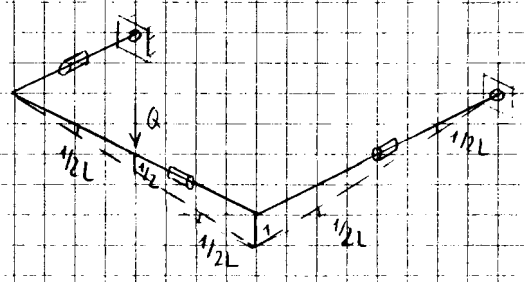
5a)



$$Q_{cr} \leq \frac{7H_u}{4l}$$

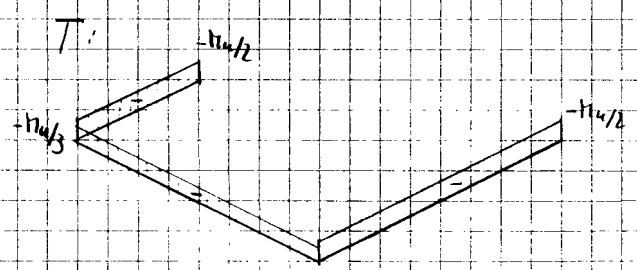
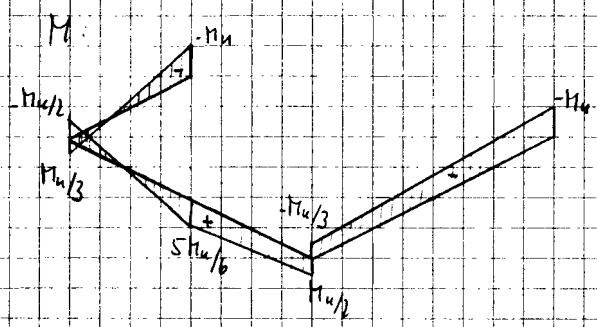


$$Q_{cr} \leq \frac{5M_u}{3l}$$



$$Q_{cr} \leq \frac{5M_u}{2l}$$

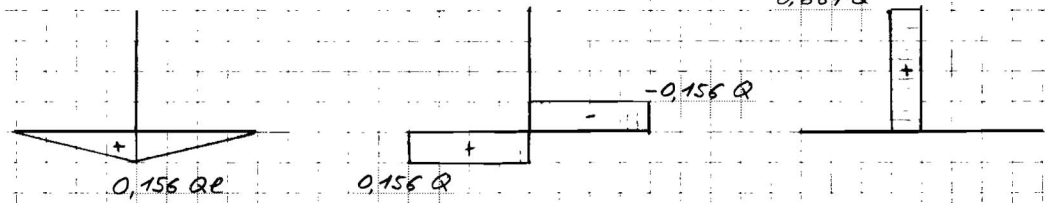
6) $Q_{cr} = \frac{5M_u}{3l}$



6a) M:

V:

N:



b) Hänger kommt zuerst ins Fließen.

$$Q = 1,455 f_y \cdot A = 509,2 \text{ kN}$$

$$\delta = 14 \text{ mm}$$

c) $Q_u = 2666 \text{ kN}$