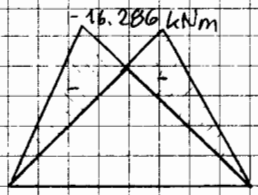
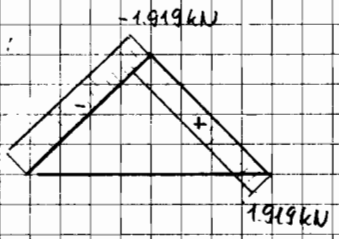
Baustatik I + II Lösung der Session-prüfung

Frühjahr 06

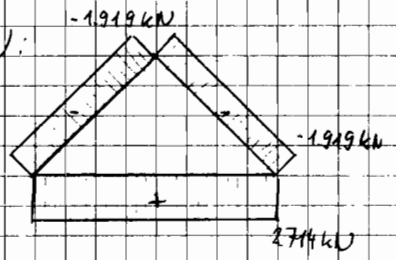
1a) M:



V:



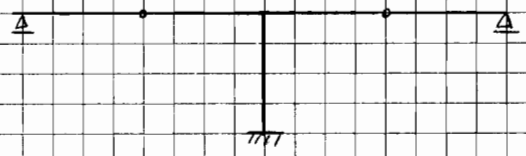
N:



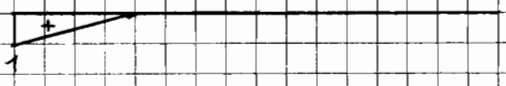
b) $\delta_{B_V} = -9.987\,mm$

$\delta_{B_H} = -9.987\,mm$

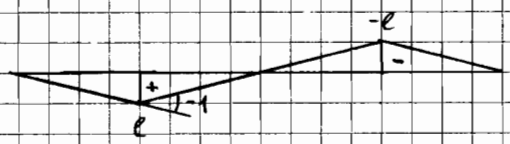
2



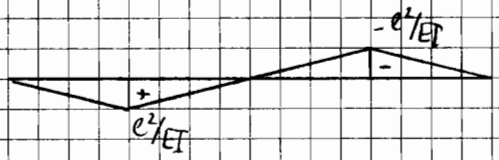
a) η_A:



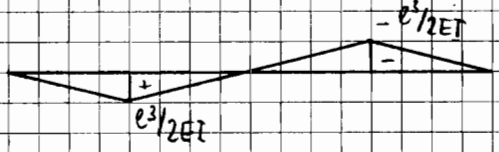
b) η_{H_F}:



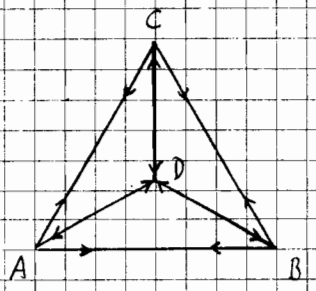
c) η_{φ_C}:



d) η_{w_C}:



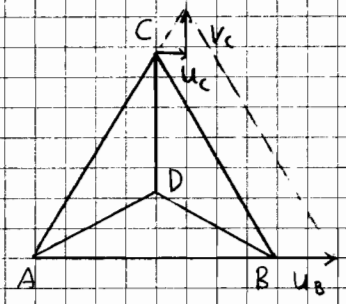
3.



$A_V = B_V = C_V = \frac{Q}{3}$

$S_{AD} = S_{BD} = S_{CD} = -\frac{Q}{2}\sqrt{\frac{2}{3}}$ Druck

$S_{AB} = S_{AC} = S_{BC} = \frac{Q}{6}\sqrt{\frac{2}{3}}$

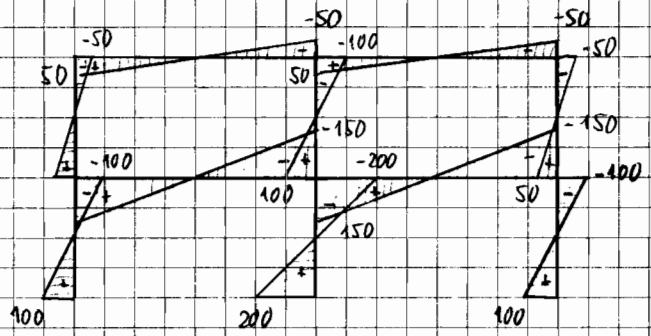


$u_B = \frac{QL}{6EA}\sqrt{\frac{2}{3}}$

$u_C = \frac{QL}{12EA}\sqrt{\frac{2}{3}}$

$V_C = \frac{QL}{12EA}\sqrt{2}$

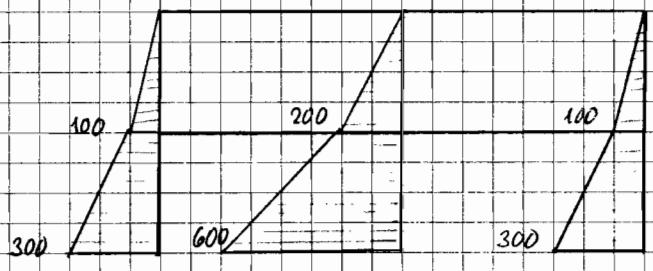
4a)



1. Stock $u_{1\,tot} = 9.6\,mm$

2. Stock $u_{2\,tot} = 14.4\,mm$

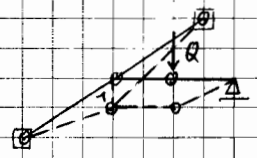
b)



1. Stock: $w_{1\,tot} = 67\,mm$

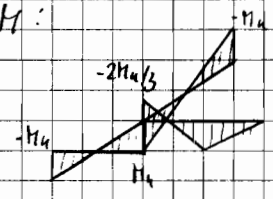
2. Stock: $w_{2\,tot} = 202\,mm$

5) $Q_u = \frac{8 M_u}{3 \ell}$

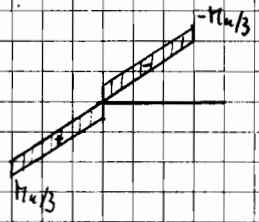


Plattenbalkenkonsolle:

M:



T:



6. $w_1 = 65\ mm$

$M_1 = -300\ kNm$

$w_2 = 95\ mm$

$M_2 = -414\ kNm$

$\sigma\ (z = -150\ mm) = 130\ N/mm^2$

$\sigma\ (z = 150\ mm) = -330\ N/mm^2$