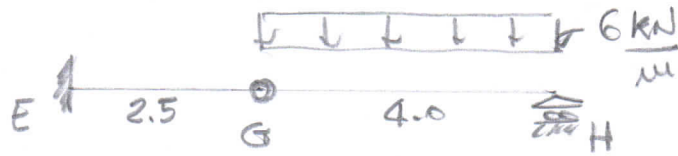
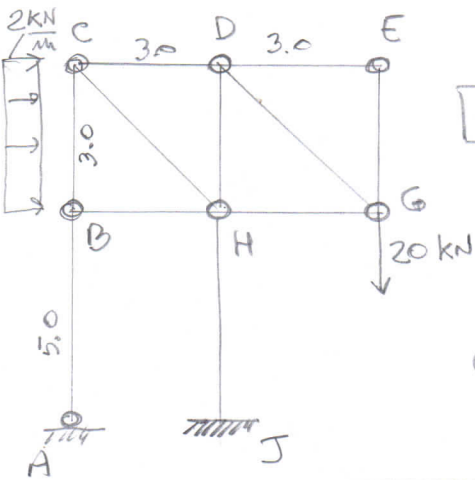


ES.1



60 min

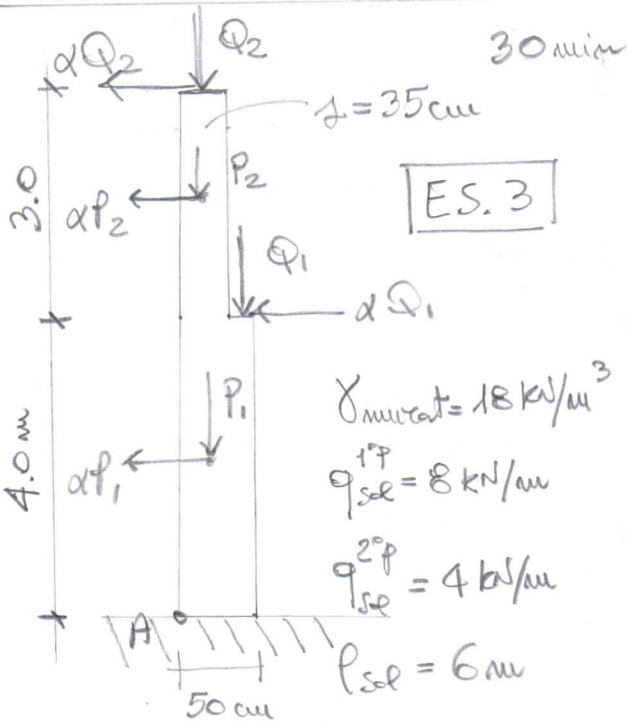
- R.V. (A, D, E, G, H)
- Diagrammi quotati di N, T, M su ABCD
- Diagrammi quotati di T, M su EGH



ES.2

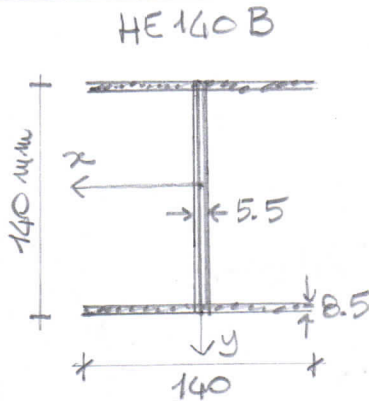
60 min

- R.V. ext (A, J) e int. (B, H)
- Diagrammi quotati di N, T, M su AB, HJ, BC
- Equilibris nodi B, E, G (G anche grafico) e relativi sforzi assiali
- Equilibris nodi C, D e relativi sforzi assiali



ES.3

- Determinare  $Q_1, Q_2, P_1, P_2$
- Determinare  $\alpha$  che soddisfi l'equilibrio alle rotazioni intorno ad A



$A = 31.6 \text{ cm}^2$

$I_x = 1033 \text{ cm}^4$

$I_y = 389 \text{ cm}^4$

ES.4

Applicato  $M_x = 15 \text{ kNm}$  determinare:

- $G, \sigma, m, n$  45 min
- Diagramme  $\sigma_z$
- Valore di  $\sigma_{z/\max}$

Applicato  $M_x = 15 \text{ kNm} + M_y = 5 \text{ kNm}$  determinare:

- $\sigma, m, n$
- Diagramme  $\sigma_z$
- Valore di  $\sigma_z^{\max}$  e  $\sigma_z^{\min}$