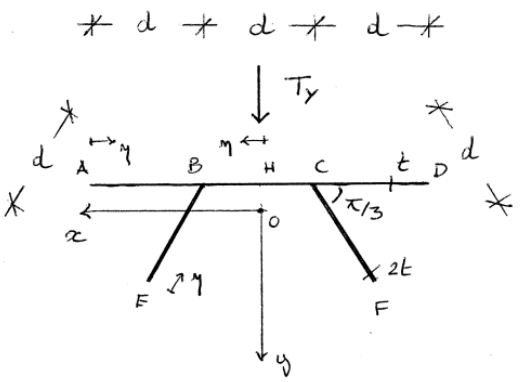
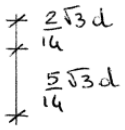
Università di Pisa
Esame di SCIENZA DELLE COSTRUZIONI II
Corso di Laurea in Ingegneria Civile, Ambientale e Edile
(Docente: Prof. Stefano Bennati – Co-docente: Prof. Riccardo Barsotti)

Prova scritta del 15 gennaio 2021 - Sintesi Soluzione

PROBLEMA 1





cds: T_y, $M_x = 10\,T_y d$

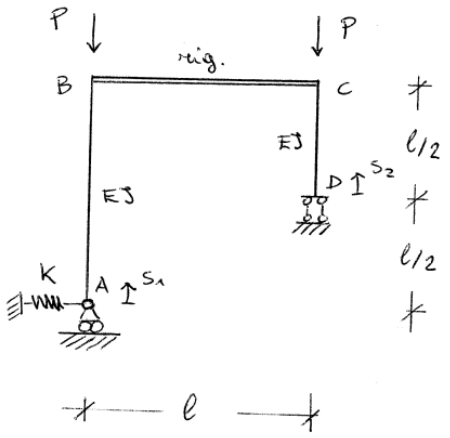
a) $HO = \frac{\sqrt{3}}{7} d$

b) $J_x = \frac{4}{7} t d^3$

c) $\sigma_z = \frac{35}{2} \frac{T_y}{td^2} y$ $\qquad \tau_{z\eta}^{AB} = \frac{\sqrt{3}}{4} \frac{T_y}{td^2} \eta = \tau_{z\eta}^{HB}$ $\qquad \tau_{z\eta}^{EB} = \frac{\sqrt{3}}{16} \frac{T_y}{td^3} (7\eta^2 - 10\eta d)$

d) $\max \sigma_1^B \cong 0{,}04 \frac{T_y}{td}$

PROBLEMA 2



$EJ v_1^{IV} + P v_1'' = 0$

$EJ v_2^{IV} + P v_2'' = 0$

$v_1''(0) = 0$

$K v_1(0) + EJ v_1'''(0) + P v_1'(0) = 0$

$v_1'(\ell) = v_2'(\ell/2) = 0$

$v_1(\ell) = v_2(\ell/2)$

$v_2'(0) = 0$

$v_2'''(0) = 0$

$v_2'''(\ell) + v_2'''(\ell/2) = 0$