Università di Pisa
Esame di SCIENZA DELLE COSTRUZIONI I
Corso di Laurea in Ingegneria Civile, Ambientale e Edile

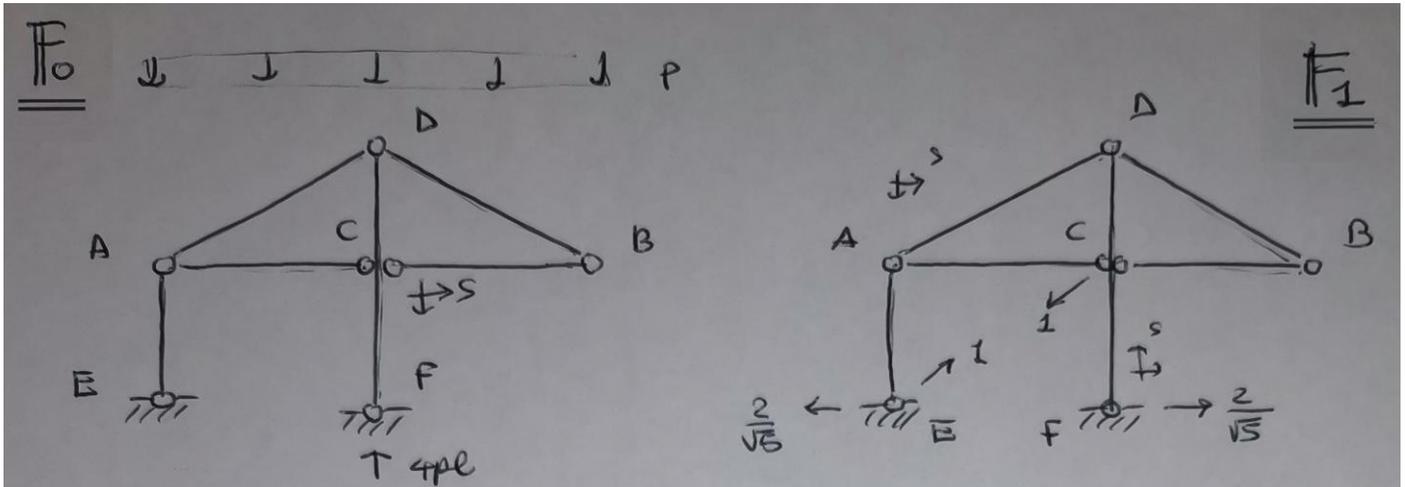*(Docenti: Prof. Ing. Stefano Bennati - Prof. Ing. Riccardo Barsotti)*

<u>*Sintesi della soluzione della prova scritta telematica del 4 novembre 2021*</u>

$N_{DB} = \sqrt{5}\,p\ell \quad T_{DB} = 0 \quad M_{DB} = 0$

$N_{BC} = -2p\ell$

$T_{BC} = p\ell - ps$

$M_{BC} = p\ell s - p\dfrac{s^2}{2}$

$N_{FC} = -4p\ell$

$T_{FC} = 0 \quad M_{FC} = 0$

$N_{CD} = -2p\ell$

$T_{CD} = 0 \quad M_{CD} = 0$

$N_{DB} = 0 \quad T_{DB} = 0 \quad M_{DB} = 0$

$N_{BC} = 0 \quad T_{BC} = 0 \quad M_{BC} = 0$

$N_{FC} = 0$

$T_{FC} = -\dfrac{2}{\sqrt{5}} \qquad M_{FC} = -\dfrac{2s}{\sqrt{5}}$

$N_{AD} = -1 \qquad T_{AD} = 0 \qquad M_{AD} = 0$

$N_{AC} = \dfrac{2}{\sqrt{5}} \qquad T_{AC} = 0 \qquad M_{AC} = 0$

$N_{AE} = -\dfrac{1}{\sqrt{5}} \qquad T_{AE} = 0 \qquad M_{AE} = 0$

$N_{CD} = \dfrac{1}{\sqrt{5}}$

$T_{CD} = \dfrac{2}{\sqrt{5}} \qquad M_{CD} = (s - 2\ell)\,\dfrac{2}{\sqrt{5}}$

$M_1 = M_{10} + X_1 M_{11} = -X_1 \dfrac{\sqrt{5}\ell}{EA}$

<u>con :</u> $\qquad M_{10} \cdot 1 = \dfrac{(-1)(\sqrt{5}p\ell)}{EA}\,\sqrt{5}\ell$

$\qquad\qquad M_{11} \cdot 1 = \dfrac{(-1)(-1)}{EA}\,\sqrt{5}\ell$

<u>da cui :</u> $\quad X_1 = \dfrac{-M_{10}}{M_{11} + \dfrac{\sqrt{5}\ell}{EA}} = \dfrac{\sqrt{5}\,p\ell}{2}$