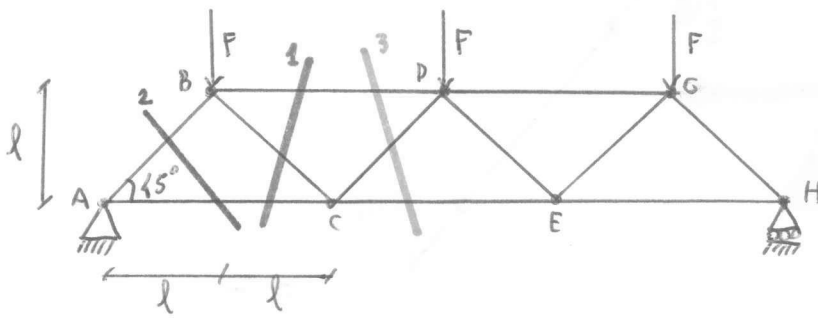


# TRAVE RETICOLARE



È ISOSTATICA perché

REAZIONI DEI NODI

$$\begin{aligned} A, H &= 2[2(2-1)] = 2[2] = 4 \\ B, G &= 2[2(3-1)] = 2[4] = 8 \\ C, D, E &= 3[2(4-1)] = 3[6] = 18 \end{aligned}$$

30 G.D.V

REAZIONI VINCOLARI TOTALI 33

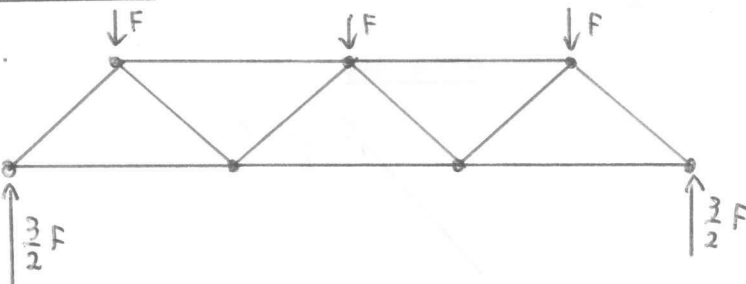
REAZIONI VINCOLARI DEI VINCOLI 30 G.D.V

G.D.L.

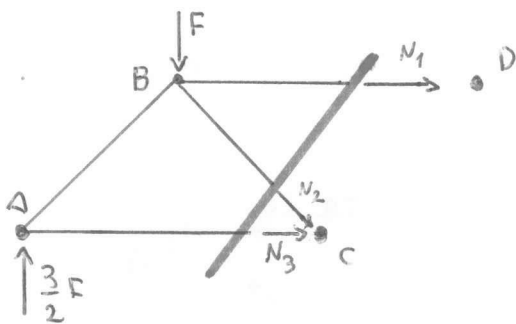
Sono 17 aste con 3 gradi di libertà per ciascuna  $17 \cdot 3 = 33$

$$33 G.D.L. = 33 G.D.V$$

REAZIONI VINCOLARI



PRIMA SEZIONE



ASTA BD



ASTA AC



(N<sub>1</sub>) MOMENTO RISPETTO A (C)

$$-\frac{3}{2}F \cdot 2l - N_1 l + Fl = 0$$

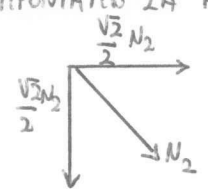
$$-N_1 l = 3Fl - Fl$$

$$N_1 = -2 \frac{Fl}{l}$$

(N<sub>3</sub>) MOMENTO RISPETTO A (B)

$$-\frac{3}{2} \frac{Fl}{l} = \frac{3}{2} F$$

SCORRIMENTO LA FORZA ( $N_2$ )



Si fa l'equilibrio alla trazione verticale

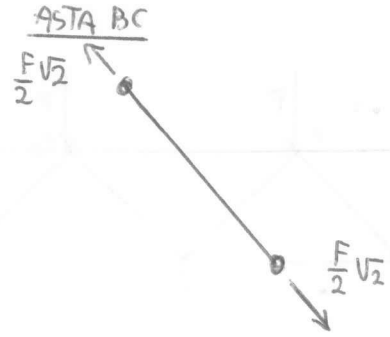
$$\frac{3F}{2} - F - \frac{\sqrt{2}}{2} N_2 = 0$$

$$-\frac{\sqrt{2}}{2} N_2 = -\frac{3F}{2} + F$$

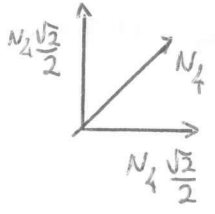
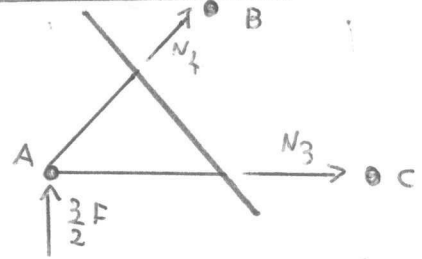
$$\frac{\sqrt{2}}{2} N_2 = \frac{3F}{2} - F$$

$$\frac{\sqrt{2}}{2} N_2 = \frac{3F - 2F}{2}$$

$$N_2 = \frac{F}{2} \cdot \frac{2}{\sqrt{2}} = \frac{F\sqrt{2}}{2}$$



SECONDA SEZIONE

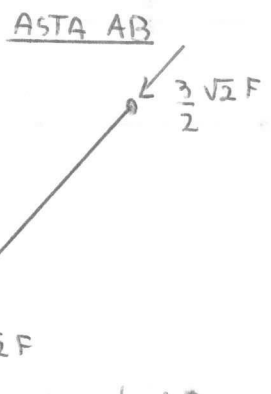


Facciamo l'equilibrio a trazione verticale

$$\frac{3F}{2} + N_4 \frac{\sqrt{2}}{2} = 0$$

$$N_4 \frac{\sqrt{2}}{2} = -\frac{3F}{2}$$

$$N_4 = -\frac{3F}{2} \cdot \frac{2}{\sqrt{2}} = -\frac{3\sqrt{2}F}{2}$$

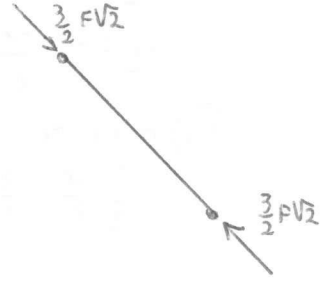


Essendo la struttura SIMMETRICA i valori sono uguali se consideriamo la parte di trave che parte da H quindi:

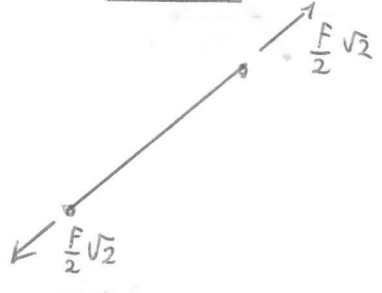
ASTA EH



ASTA GH

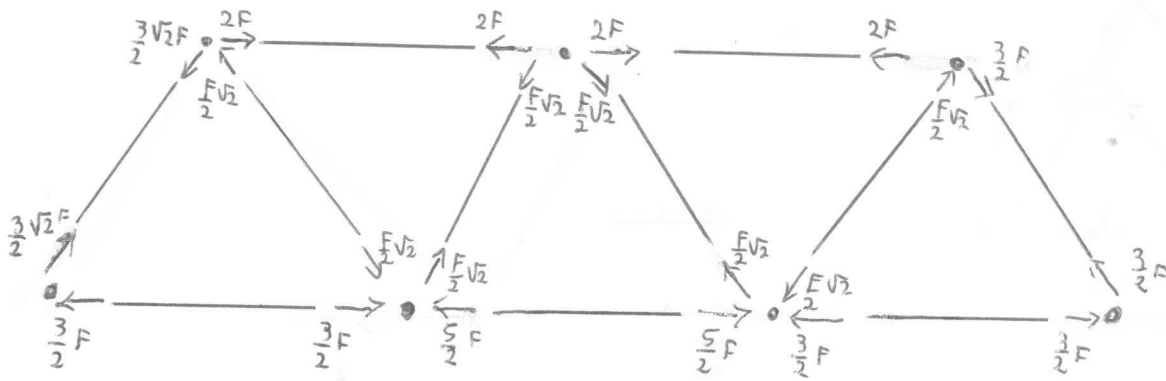


ASTA EG





Alla fine gli forze normali che agiscono sulla trave sono



Impostando  $F = 20 \text{ kN}$   $l = 2 \text{ m}$

ovvero che

$$\frac{3}{2} F \sqrt{2} = 42,42 \text{ kN}$$

$$2F = 40 \text{ kN}$$

$$\frac{3}{2} F = 30 \text{ kN}$$

$$\frac{5}{2} F = 50 \text{ kN}$$

$$F \sqrt{2} = 14,14 \text{ kN}$$

$$\frac{5}{2} F = 50 \text{ kN}$$

