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APPUNTI FACILI PER TUTTI



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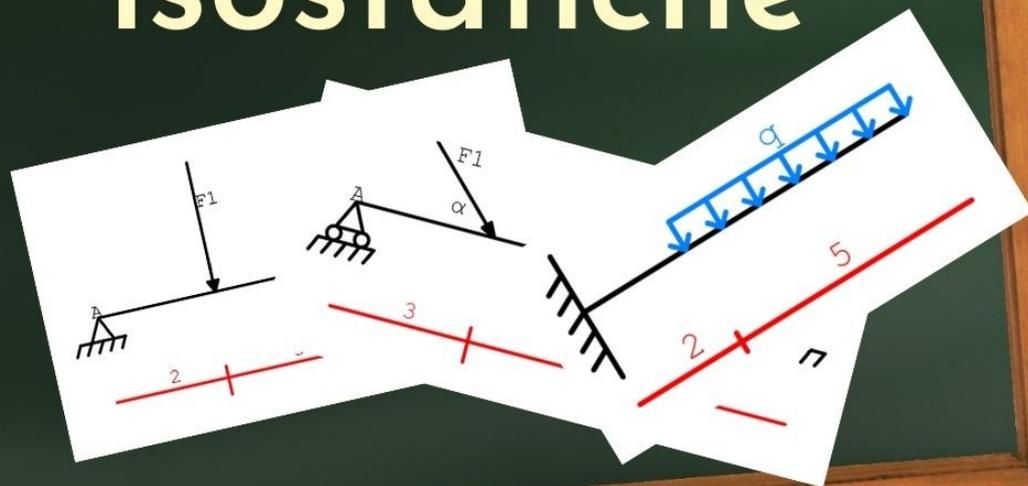


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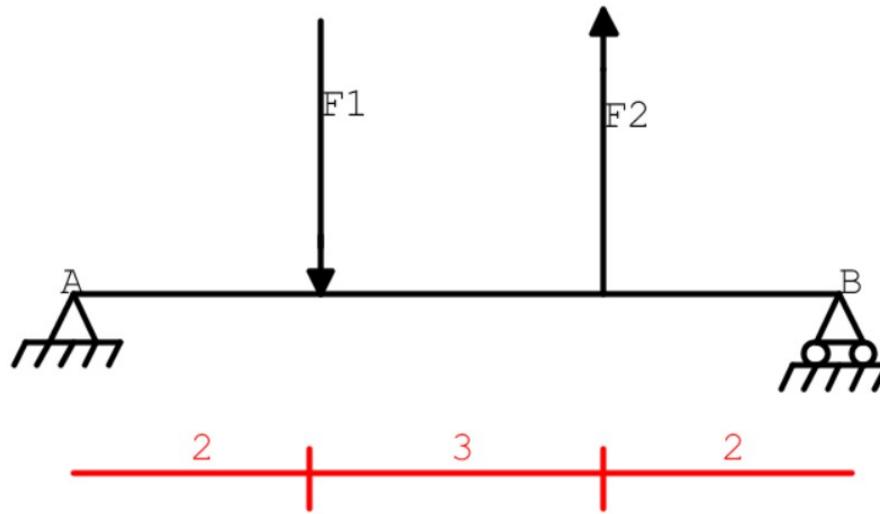
Esercizi sulle travi isostatiche



TRAVE ISOSTATICA 1

Determinare le reazioni vincolari della trave in figura

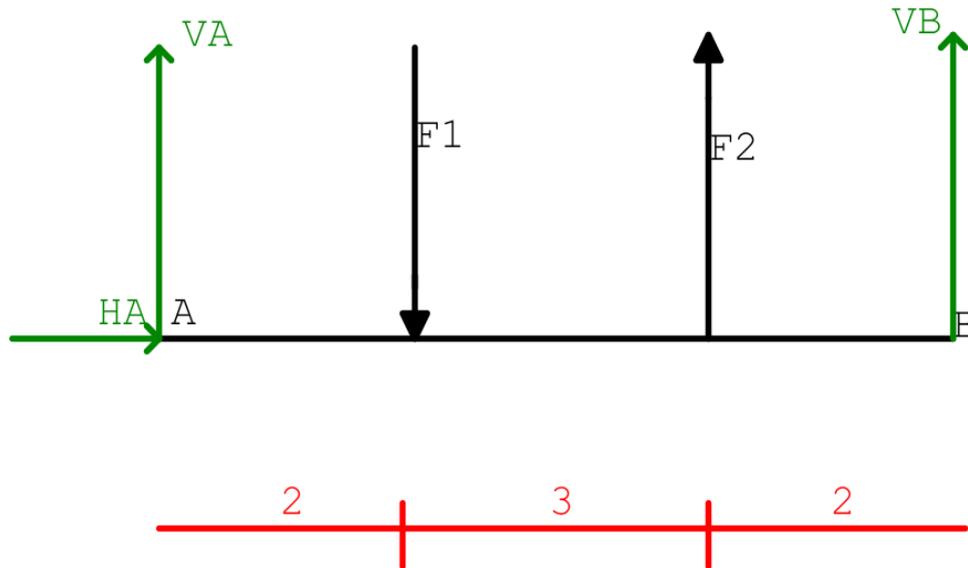
$$F_1 = 150\text{N}$$
$$F_2 = 200\text{N}$$



TRAVE ISOSTATICA 1

Determinare le reazioni vincolari della trave in figura

1. Rimuovere i vincoli sostituendoli con gli spostamenti impediti



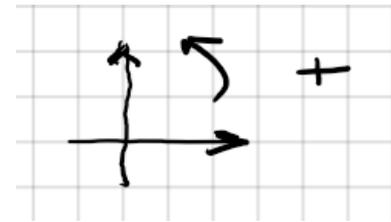
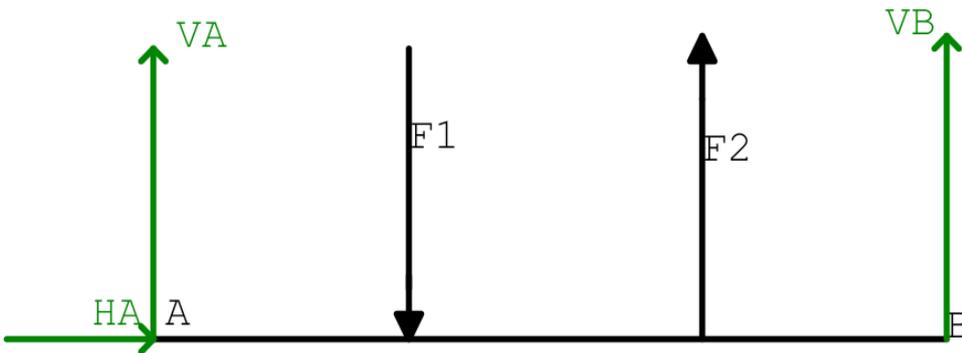
Carrello →
1 movimento impedito

Cerniera →
2 movimenti impediti

TRAVE ISOSTATICA 1

Determinare le reazioni vincolari della trave in figura

2. Definire il sistema di riferimento e scrivere le equazioni della statica



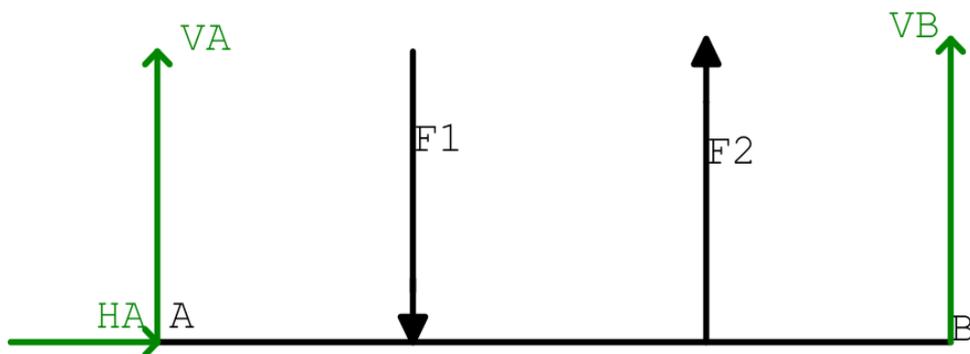
$$\begin{cases} \Sigma_x : 0 = H_A \\ \Sigma_y : 0 = V_A - F_1 + F_2 + V_B \\ \Sigma_{M(A)} : 0 = -F_1 \cdot 2 + F_2 \cdot 5 + V_B \cdot 7 \end{cases}$$



TRAVE ISOSTATICA 1

Determinare le reazioni vincolari della trave in figura

3. Risolvere il sistema



$$\begin{cases} \Sigma_x: 0 = H_A \\ \Sigma_y: 0 = V_A - F_1 + F_2 + V_B \\ \Sigma_{M(A)}: 0 = -F_1 \cdot 2 + F_2 \cdot 5 + V_B \cdot 7 \end{cases}$$

$$\Sigma_{M(A)}: 0 = -F_1 \cdot 2 + F_2 \cdot 5 + V_B \cdot 7$$

$$\Sigma_{M(A)}: 0 = -150 \cdot 2 + 200 \cdot 5 + V_B \cdot 7$$

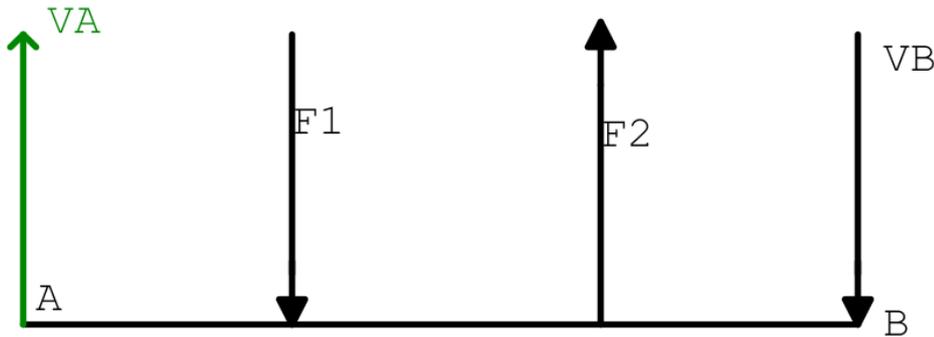
$$\Sigma_{M(A)}: 0 = 700 + V_B \cdot 7 \Rightarrow V_B = -100 \text{ N}$$



TRAVE ISOSTATICA 1

Determinare le reazioni vincolari della trave in figura

3. Risolvere il sistema



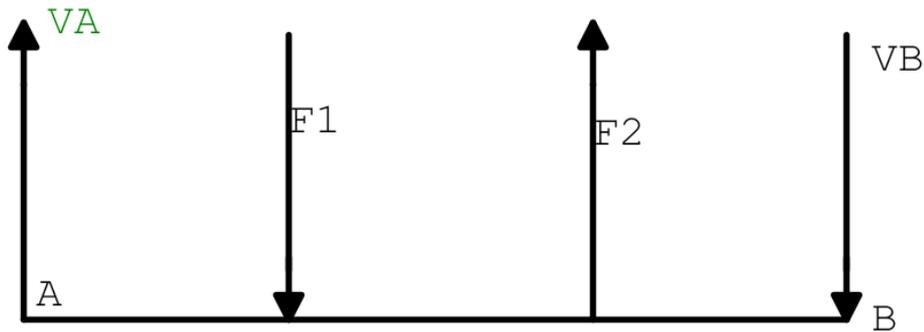
$$\begin{cases} \Sigma_x: 0 = H_A \\ \Sigma_y: 0 = V_A - F_1 + F_2 + V_B \\ \Sigma_{M(A)}: 0 = -F_1 \cdot 2 + F_2 \cdot 5 + V_B \cdot 7 \end{cases}$$

$$\Sigma_y: 0 = V_A - 150 + 200 - 100$$

$$\Sigma_y: 0 = V_A - 50 \Rightarrow V_A = 50 \text{ N}$$

TRAVE ISOSTATICA 1

Determinare le reazioni vincolari della trave in figura



$$\begin{cases} H_A = 0 \\ V_A = 50 \text{ N} \\ V_B = 100 \text{ N} \end{cases}$$



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