

Verso effettivo dei carichi riportato nel disegno.

Calcolare reazioni vincolari della struttura e delle aste.

Tracciare i diagrammi delle azioni interne nelle aste.

Esprimere le funzioni delle azioni interne nelle aste.

Calcolare spostamento e rotazione di tutti i nodi.

u_A v_A ϕ_A spostamento assoluto del nodo A.

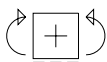
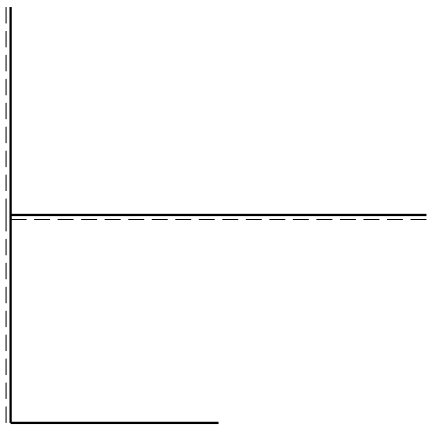
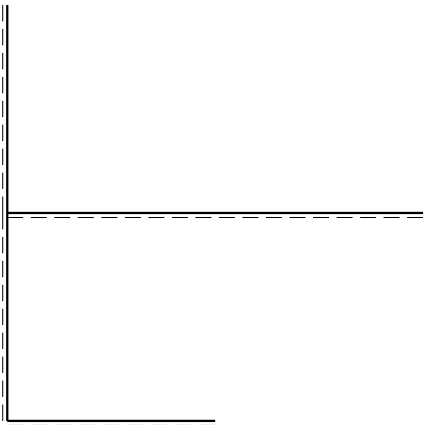
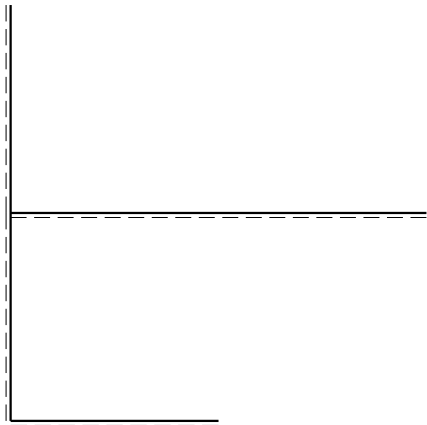
J_{AB} x_{AB} ϕ_{AB} riferimento locale asta AB con origine in A.

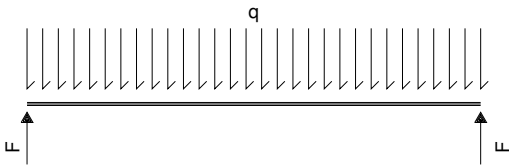
<> ESAME 15/01/2019 - APPELLO 01 - IPERSTATICA

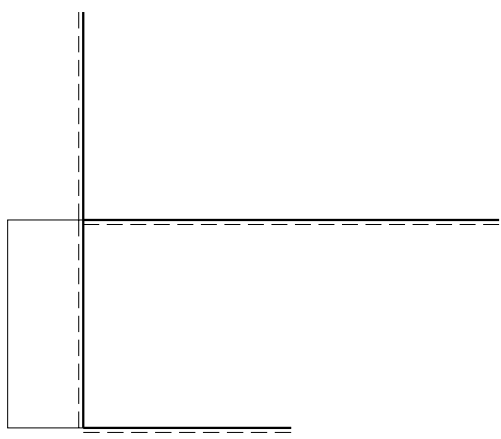
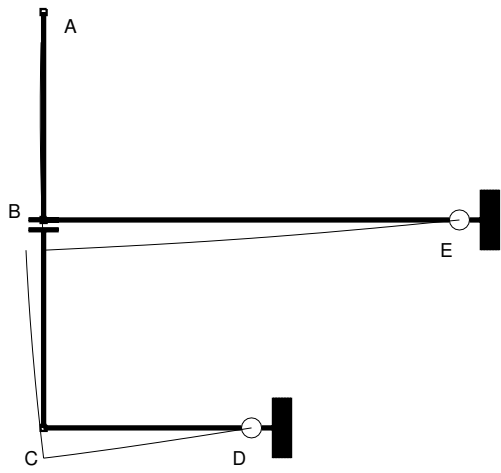
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<> Struttura 1: Isostatica Test 1

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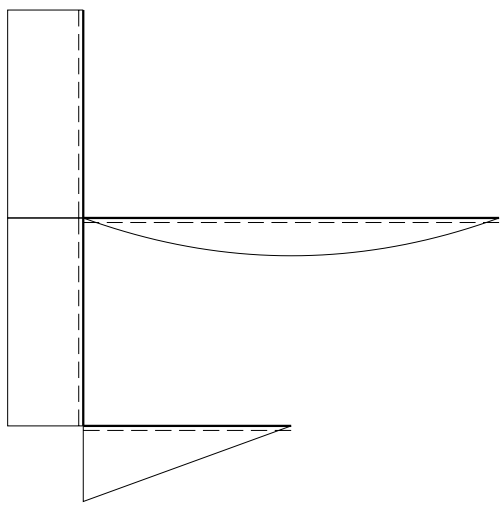
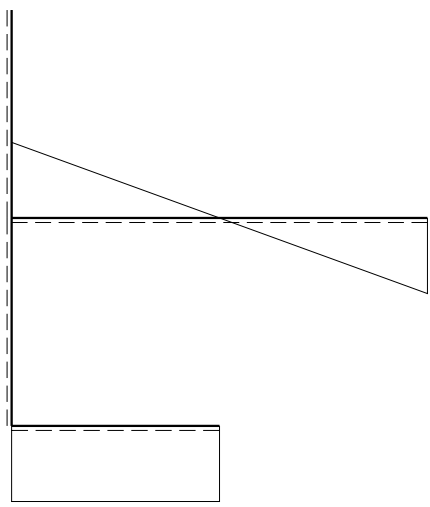






$5 Fb^3/EJ$

$1 F$



$1 F$

$1 Fb$

REAZIONI

$$H_D = 0$$

$$V_D = -(W/b) + 2qb = F$$

$$H_E = 0$$

$$V_E = (W/b) = F$$

$$H_{AB} = 0$$

$$V_{AB} = 0$$

$$W_{AB} = -W = -Fb$$

$$H_{BA} = 0$$

$$V_{BA} = 0$$

$$W_{BA} = W = Fb$$

$$H_{BC} = 0$$

$$V_{BC} = (W/b) - 2qb = -F$$

$$W_{BC} = W - 2qb^2 = -Fb$$

$$H_{CB} = 0$$

$$V_{CB} = -(W/b) + 2qb = F$$

$$W_{CB} = -W + 2qb^2 = Fb$$

$$H_{BE} = 0$$

$$V_{BE} = -(W/b) + 2qb = F$$

$$W_{BE} = -2W + 2qb^2 = 0$$

$$H_{EB} = 0$$

$$V_{EB} = (W/b) = F$$

$$W_{EB} = 0$$

$$H_{CD} = 0$$

$$V_{CD} = (W/b) - 2qb = -F$$

$$W_{CD} = W - 2qb^2 = -Fb$$

$$H_{DC} = 0$$

$$V_{DC} = -(W/b) + 2qb = F$$

$$W_{DC} = 0$$

SPOSTAMENTI NODALI

$$u_A = 9/2(Wb^2/EJ) - 14/3(qb^4/EJ) = -1/6(Fb^3/EJ)$$

$$v_A = 16/3(Wb^2/EJ) - 22/3(qb^4/EJ) = -2(Fb^3/EJ)$$

$$\varphi_A = -5(Wb/EJ) + 14/3(qb^3/EJ) = -1/3(Fb^2/EJ)$$

$$u_B = 0$$

$$v_B = 16/3(Wb^2/EJ) - 22/3(qb^4/EJ) = -2(Fb^3/EJ)$$

$$\varphi_B = -4(Wb/EJ) + 14/3(qb^3/EJ) = 2/3(Fb^2/EJ)$$

$$u_C = 0$$

$$v_C = 16/3(Wb^2/EJ) - 22/3(qb^4/EJ) = -2(Fb^3/EJ)$$

$$\varphi_C = -5(Wb/EJ) + 20/3(qb^3/EJ) = 5/3(Fb^2/EJ)$$

$$u_D = 0$$

$$v_D = 0$$

$$\varphi_{DDC} = -11/2(Wb/EJ) + 23/3(qb^3/EJ) = 13/6(Fb^2/EJ)$$

$$u_E = 0$$

$$v_E = 0$$

$$\varphi_{EEB} = -2(Wb/EJ) + 10/3(qb^3/EJ) = 4/3(Fb^2/EJ)$$

AZIONI INTERNE (coordinate locali)

$$N_{AB} = 0$$

$$T_{AB} = 0$$

$$M_{AB} = Fb$$

$$N_{BC} = -F$$

$$T_{BC} = 0$$

$$M_{BC} = Fb$$

$$N_{BE} = 0$$

$$T_{BE} = F - qx$$

$$M_{BE} = Fx - 1/2qx^2$$

$$N_{CD} = 0$$

$$T_{CD} = -F$$

$$M_{CD} = Fb - Fx$$