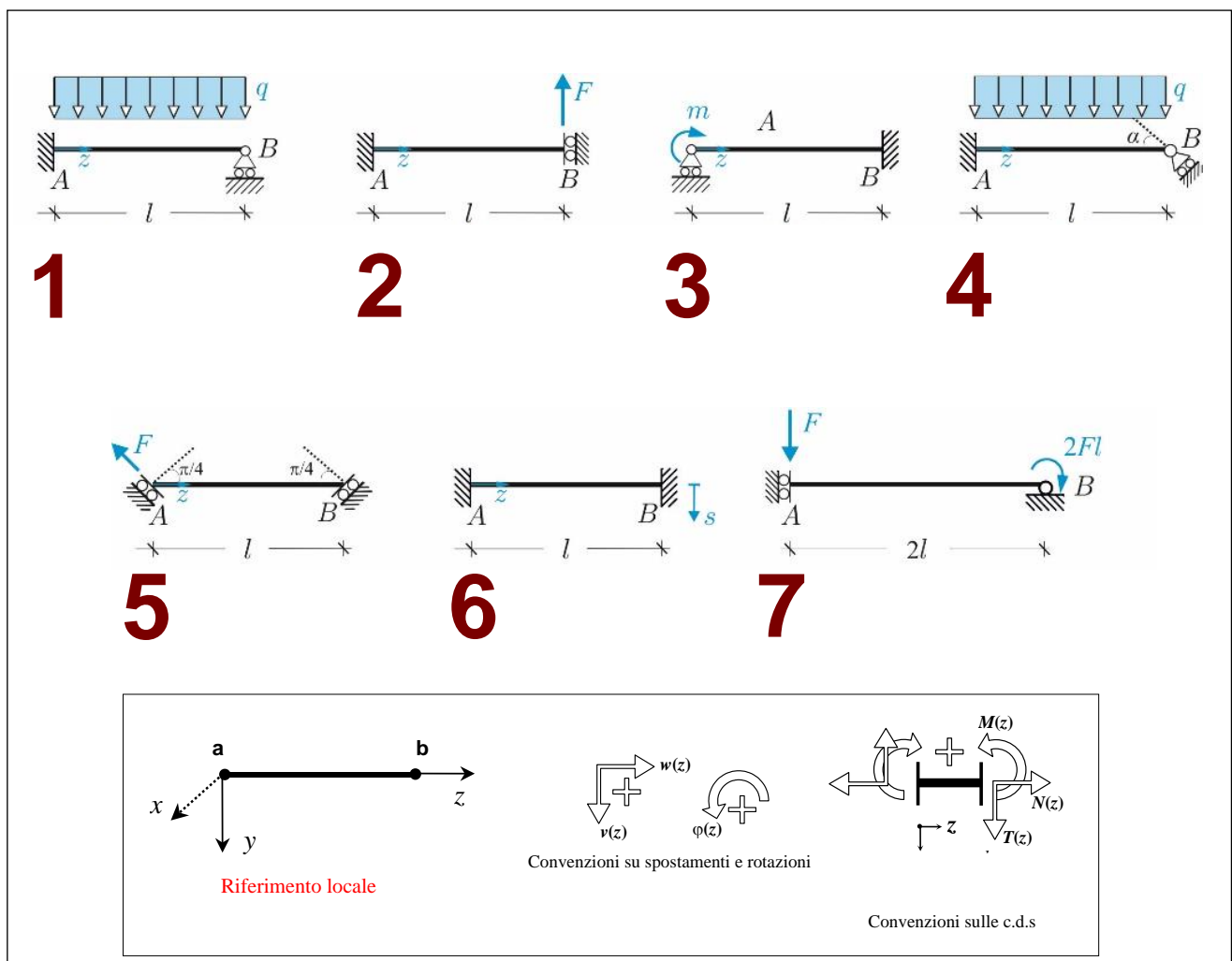


(E15a) –Linea elastica 1/2

Problemi 1-7. Per ciascuna delle *travi indeformabili a taglio* ($\gamma=0$) riportate in figura: **a)** scrivere le equazioni della linea elastica con le rispettive condizioni al contorno; **b)** disegnare qualitativamente la *deformata* della trave; **c)** determinare le leggi di variazione dei campi di spostamento e tensione e tracciare i relativi diagrammi. Si assumano uniformi le rigidzze con $EA=EI/l^2$. Si ricorda che: $N=EAw'$, $T=-EIv'''$, $M=-EIv''$.



The figure shows seven beam problems (1-7) and a legend for conventions. Problems 1-4 are in the top row, and 5-7 are in the bottom row. Each problem shows a beam of length l with various supports and loads. Problem 1: Fixed at A, roller at B, distributed load q . Problem 2: Fixed at A, roller at B, point load F at B. Problem 3: Fixed at A, roller at B, moment m at A. Problem 4: Fixed at A, roller at B, distributed load q , angle α at B. Problem 5: Fixed at A, roller at B, point load F at A, angle $\pi/4$ at both ends. Problem 6: Fixed at A, roller at B, point load s at B. Problem 7: Fixed at A, roller at B, point load F at A, moment $2Fl$ at B. The legend defines the local reference system (x, y, z) and the conventions for displacements ($w(z)$, $v(z)$), rotations ($\varphi(z)$), and internal forces ($M(z)$, $N(z)$, $T(z)$).

COGNOME.....
NOME.....
MAT.....

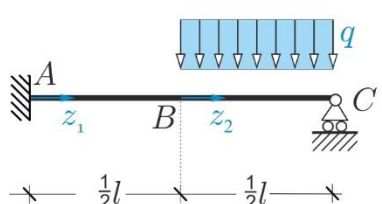
PAGINA WEB DEL CORSO:
www.pcasini.it/disg/statica

Soluzioni: cap. 9, § 9.5-9.6 (4° edizione)

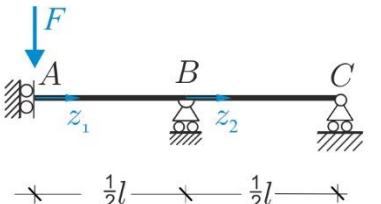
(E15b) –Linea elastica 2/2

Problemi 1-5. Per ciascuna delle *travi indeformabili a taglio* ($\gamma=0$) riportate in figura: **a)** scrivere le equazioni della linea elastica con le rispettive condizioni al contorno; **b)** disegnare qualitativamente la *deformata* della trave; **c)** determinare le leggi di variazione dei campi di spostamento e tensione e tracciare i relativi diagrammi. Si ricorda che: $N=EAw'$, $T=-EI v'''$, $M=-EIv''$.

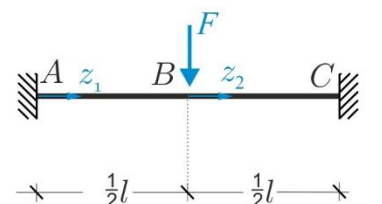
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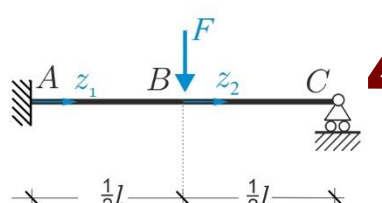
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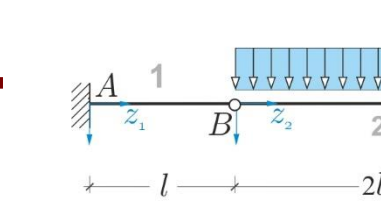
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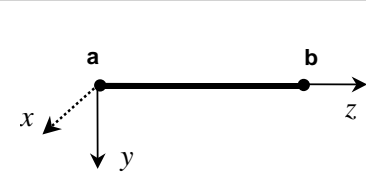


4

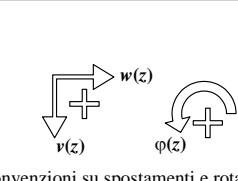


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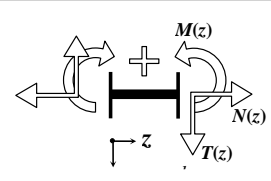




Riferimento locale



Convenzioni su spostamenti e rotazioni



Convenzioni sulle c.d.s

<p>COGNOME.....</p> <p>NOME.....</p> <p>MAT......</p>	<p>PAGINA WEB DEL CORSO: www.pcasini.it/disg/statica</p> <p>Soluzioni: cap. 9, § 9.4-9.6 (4° edizione)</p>
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