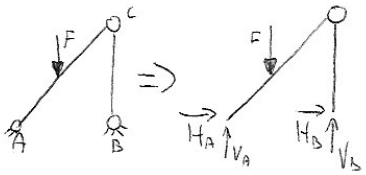
SOLUZIONE DEGLI ESERCIZI

① 

$(R_x = 0) \Rightarrow H_A + H_B = 0$ ↺+

$(R_y = 0) \Rightarrow V_A + V_B - F = 0$

$(M_A = 0) \Rightarrow V_B \cdot \ell - F \cdot \ell/2 = 0 \Rightarrow V_B = F/2$

da $R_y \Rightarrow V_A = F/2$

Spezzo il sistema in C

$(M_C = 0)_{PARZ} \Rightarrow H_B \cdot \ell = 0 \Rightarrow H_B = 0$

da $(R_x = 0) \Rightarrow H_A = 0$

$H_C = 0$

$V_C = -V_B = -\frac{F}{2}$

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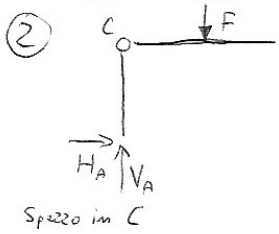
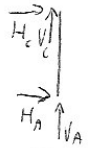
② 

$(R_y = 0) \Rightarrow V_A = F$ ↺+

$(R_x = 0) \Rightarrow H_A + H_B = 0$

$(M_C = 0) \Rightarrow -F \cdot \ell + M_B + H_A \cdot \ell = 0$

Spezzo in C



$(M_C = 0)_{PARZ} \Rightarrow H_A = 0$

da $(R_x = 0) \Rightarrow H_B = 0$

da $(M_C = 0)_{TOT}$ $M_B = F \cdot \ell$

$V_C = -V_A = -F$

$H_C = -H_A = 0$

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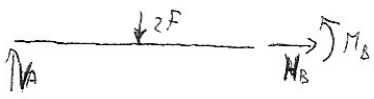
③ 

↺+

$(R_x = 0) \Rightarrow H_B = 0$

$(R_y = 0) \Rightarrow V_A = 2F$

$(M_A = 0) \Rightarrow -2F \cdot \ell + M_B = 0 \Rightarrow M_B = 2F \cdot \ell$

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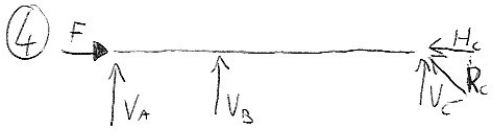
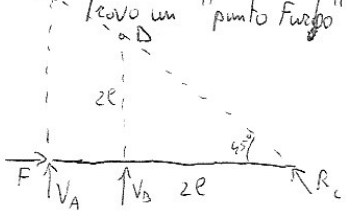
④ 

$(R_x = 0) \Rightarrow H_C = F$

$(R_y = 0) \Rightarrow V_A + V_B + V_C = 0$?

Es. Trovo un "punto Furgo" per il calcolo del momento



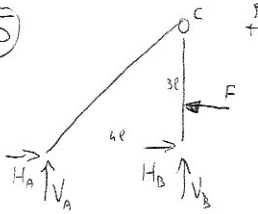
$(M_D = 0) \Rightarrow F \cdot 2\ell - V_A \cdot 2\ell \Rightarrow V_A = 2F$

Ripeto l'operazione in E

$(M_E = 0) \Rightarrow F \cdot 3\ell + V_B \cdot 2\ell \Rightarrow V_B = -3F$

da $(R_y = 0) \Rightarrow V_C = F$ come prevedibile $(R_C\ 45°)$

(5)



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$R_x \Rightarrow H_A + H_B - F = 0$

$R_y \Rightarrow V_A + V_B = 0$

$M_B \Rightarrow -V_A \cdot 4\ell + F \cdot \ell = 0 \Rightarrow V_A = \frac{F}{4}$ da R_y $V_B = -\frac{F}{4}$

Spezzo il sistema in C e calcolo il momento per l'asta BC

$(M_C = 0)_{BC} \Rightarrow H_B \cdot 3\ell - F \cdot 2\ell = 0 \Rightarrow H_B = \frac{2}{3}F$

da $R_x \Rightarrow H_A = \frac{1}{3}F$

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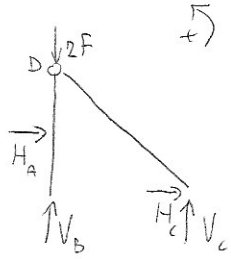
(6)



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$(R_y = 0) \Rightarrow V_C + V_B - 2F = 0$

$(R_x = 0) \Rightarrow H_A + H_C = 0$

Spezzo in D e Faccio il Momento per l'asta BD

$(M_D = 0)_{BD} \Rightarrow H_A \cdot \ell = 0$

da $R_x \Rightarrow H_C = 0$

$(M_D = 0)_{CD} \Rightarrow V_C \cdot 2\ell + H_C \cdot 2\ell = 0$

$V_C = 0$

da $R_y \Rightarrow V_B = 2F$

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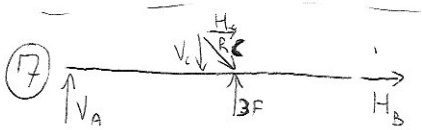
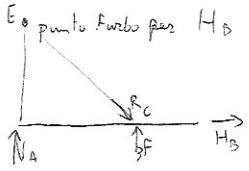
(7)



E' punto furbo per H_B



$(M_C = 0)$ $V_A \cdot 3\ell = 0 \Rightarrow V_A = 0$

$(R_x = 0)$ $H_B + H_C = 0$

$(R_y = 0)$ $V_C - 3F = 0$ $V_C = 3F$

$(M_E = 0)$ $H_B \cdot 2\ell + 3F \cdot 2\ell = 0$

$H_B = -3F \Rightarrow$ da R_x $H_C = 3F$ ok!

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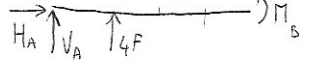
(8)



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$(R_y = 0) \Rightarrow V_A = -4F$

$(R_x = 0) \Rightarrow H_A = 0$

$(M_A = 0) \Rightarrow 4F \cdot \ell + M_B = 0$

$M_B = -4F\ell$