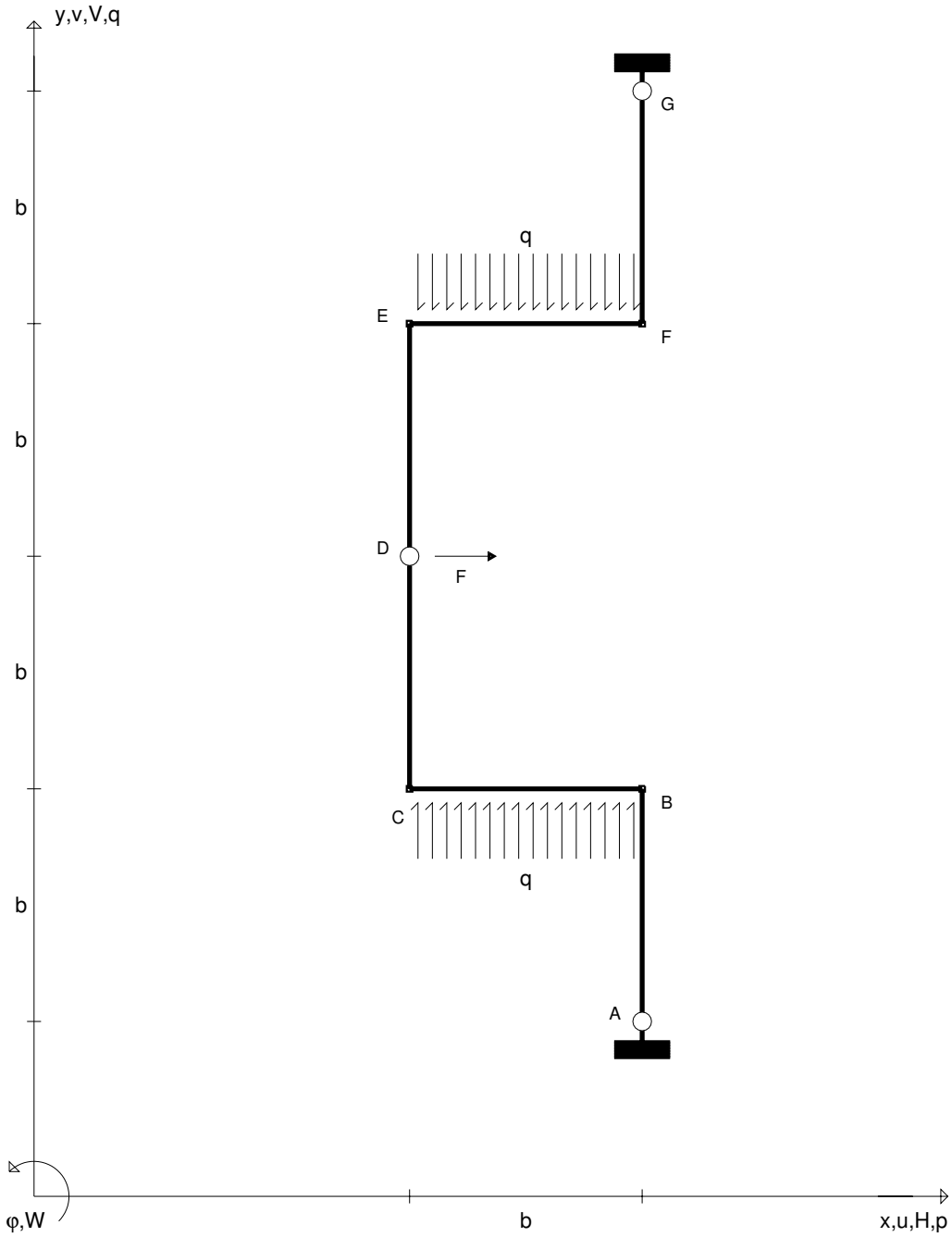
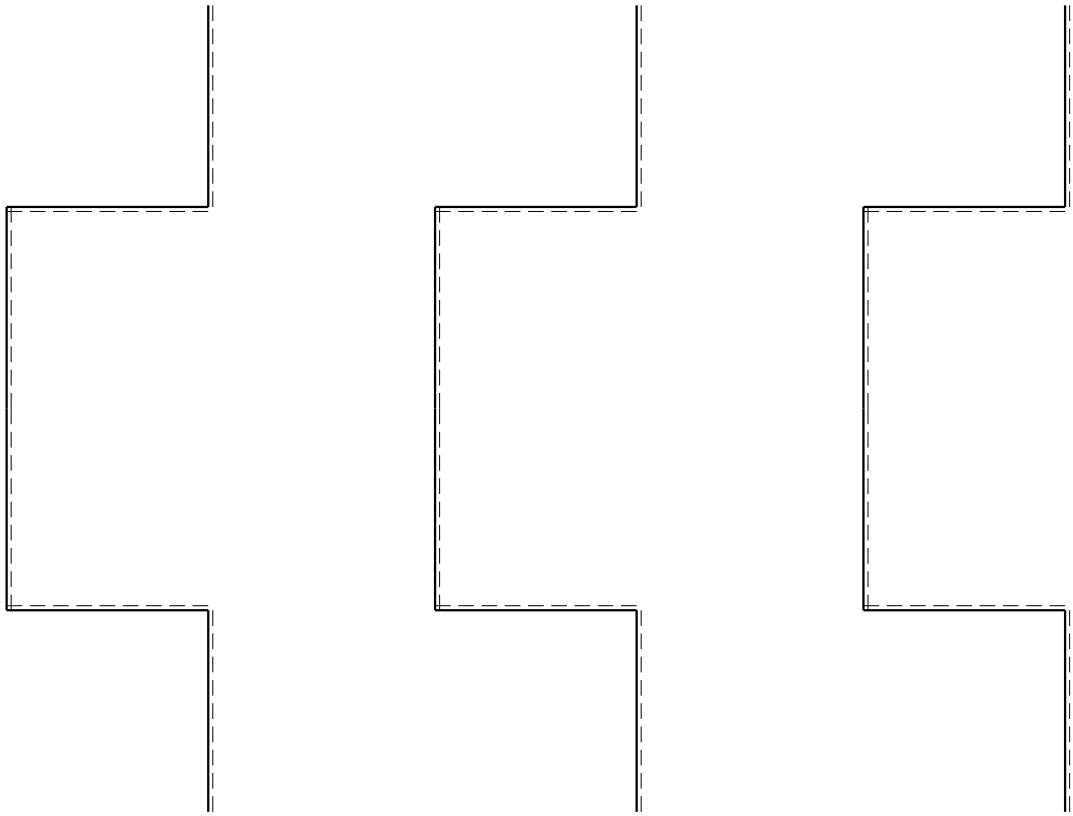
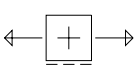
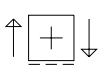
$H_D = F$
$q_{BC} = q = F/b$
$q_{EF} = -q = -F/b$
$EJ_{AB} = EJ$
$EJ_{BC} = EJ$
$EJ_{CD} = EJ$
$EJ_{DE} = EJ$
$EJ_{EF} = EJ$
$EJ_{FG} = EJ$

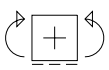


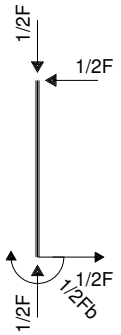
Verso effettivo dei carichi riportato nel disegno.
Calcolare reazioni vincolari della struttura e delle aste.
Tracciare i diagrammi delle azioni interne nelle aste.
Esprimere le funzioni delle azioni interne nelle aste.
Calcolare spostamento e rotazione di tutti i nodi.
$u_A\ v_A\ \varphi_A$ spostamento assoluto del nodo A.
$J_{AB}\ x_{AB}\ \vartheta_{AB}$ riferimento locale asta AB con origine in A.
<>
<>
<>
<>

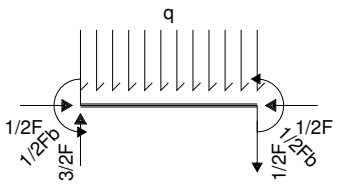


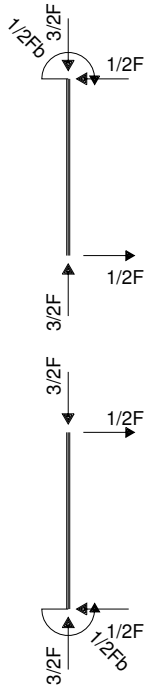


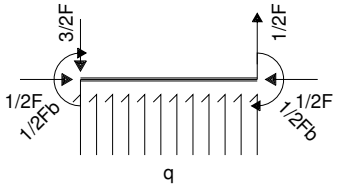


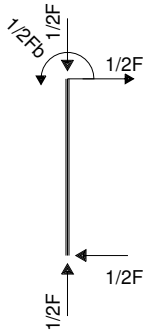


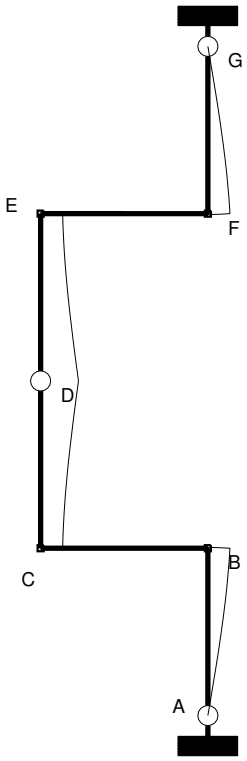

1/2F
1/2F
1/2F
1/2Fb
1/2F


q
1/2F
1/2Fb
3/2F
1/2F
1/2Fb

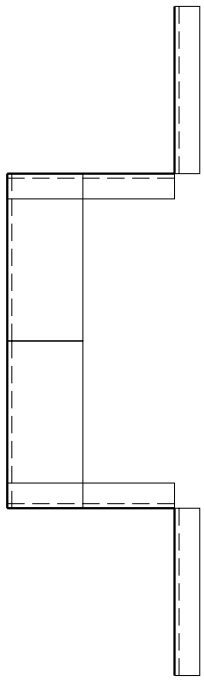

1/2Fb
3/2F
1/2F
1/2F
3/2F
3/2F
1/2F
1/2F
3/2F
1/2Fb

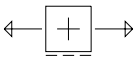

3/2F
1/2F
1/2F
1/2Fb
1/2F
1/2Fb
q


1/2Fb
1/2F
1/2F
1/2F
1/2F

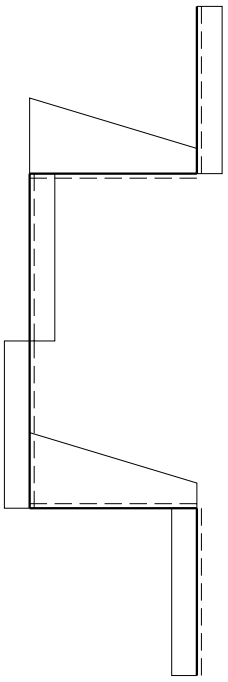


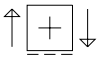
1 Fb^3/EJ



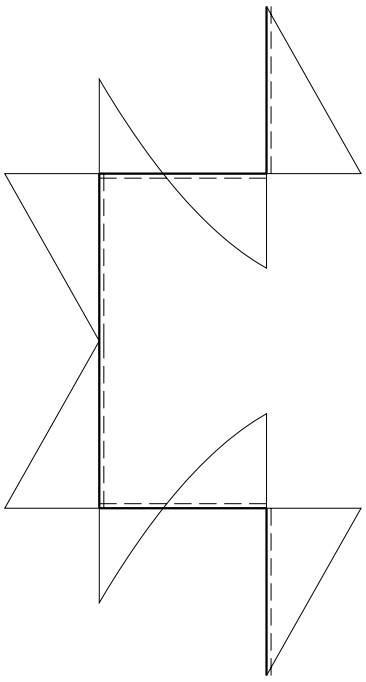


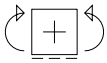
1.5 F





1.5 F





0.4 Fb

REAZIONI

$H_A = -1/2F = -1/2F$
$V_A = F -1/2qb = 1/2F$
$W_D = 0$
$H_G = -1/2F = -1/2F$
$V_G = -F +1/2qb = -1/2F$

$H_{AB} = -1/2F = -1/2F$
$V_{AB} = F -1/2qb = 1/2F$
$W_{AB} = 0$
$H_{BA} = 1/2F = 1/2F$
$V_{BA} = -F +1/2qb = -1/2F$
$W_{BA} = 1/2Fb = 1/2Fb$

$H_{BC} = -1/2F = -1/2F$
$V_{BC} = F -1/2qb = 1/2F$
$W_{BC} = -1/2Fb = -1/2Fb$
$H_{CB} = 1/2F = 1/2F$
$V_{CB} = -F -1/2qb = -3/2F$
$W_{CB} = -1/2Fb = -1/2Fb$

$H_{CD} = -1/2F = -1/2F$
$V_{CD} = F +1/2qb = 3/2F$
$W_{CD} = 1/2Fb = 1/2Fb$
$H_{DC} = 1/2F = 1/2F$
$V_{DC} = -F -1/2qb = -3/2F$
$W_{DC} = 0$

$H_{DE} = 1/2F = 1/2F$
$V_{DE} = F +1/2qb = 3/2F$
$W_{DE} = 0$
$H_{ED} = -1/2F = -1/2F$
$V_{ED} = -F -1/2qb = -3/2F$
$W_{ED} = -1/2Fb = -1/2Fb$

$H_{EF} = 1/2F = 1/2F$
$V_{EF} = F +1/2qb = 3/2F$
$W_{EF} = 1/2Fb = 1/2Fb$
$H_{FE} = -1/2F = -1/2F$
$V_{FE} = -F +1/2qb = -1/2F$
$W_{FE} = 1/2Fb = 1/2Fb$

$H_{FG} = 1/2F = 1/2F$
$V_{FG} = F -1/2qb = 1/2F$
$W_{FG} = -1/2Fb = -1/2Fb$
$H_{GF} = -1/2F = -1/2F$
$V_{GF} = -F +1/2qb = -1/2F$
$W_{GF} = 0$

SPOSTAMENTI NODALI

$u_A = 0$
$v_A = 0$
$\varphi_{AAB} = -1/3(Fb^2/EJ) -1/24(qb^3/EJ) = -3/8(Fb^2/EJ)$

$u_B = 1/4(Fb^3/EJ) +1/24(qb^4/EJ) = 7/24(Fb^3/EJ)$
$v_B = 0$
$\varphi_B = -1/12(Fb^2/EJ) -1/24(qb^3/EJ) = -1/8(Fb^2/EJ)$

$u_C = 1/4(Fb^3/EJ) +1/24(qb^4/EJ) = 7/24(Fb^3/EJ)$
$v_C = 0$
$\varphi_C = -1/12(Fb^2/EJ) +1/24(qb^3/EJ) = -1/24(Fb^2/EJ)$

$u_D = 1/2(Fb^3/EJ) = 1/2(Fb^3/EJ)$
$v_D = 0$
$\varphi_D = 0$

$u_E = 1/4(Fb^3/EJ) +1/24(qb^4/EJ) = 7/24(Fb^3/EJ)$
$v_E = 0$
$\varphi_E = 1/12(Fb^2/EJ) -1/24(qb^3/EJ) = 1/24(Fb^2/EJ)$

$u_F = 1/4(Fb^3/EJ) +1/24(qb^4/EJ) = 7/24(Fb^3/EJ)$
$v_F = 0$
$\varphi_F = 1/12(Fb^2/EJ) +1/24(qb^3/EJ) = 1/8(Fb^2/EJ)$

$u_G = 0$
$v_G = 0$
$\varphi_{GGF} = 1/3(Fb^2/EJ) +1/24(qb^3/EJ) = 3/8(Fb^2/EJ)$

AZIONI INTERNE (coordinate locali)

$N_{AB} = -1/2F$
$T_{AB} = 1/2F$
$M_{AB} = 1/2Fx$

$N_{BC} = -1/2F$
$T_{BC} = -1/2F -qx$
$M_{BC} = 1/2Fb -1/2Fx -1/2qx^2$

$N_{CD} = -3/2F$
$T_{CD} = 1/2F$
$M_{CD} = -1/2Fb +1/2Fx$

$N_{DE} = -3/2F$
$T_{DE} = -1/2F$
$M_{DE} = -1/2Fx$

$N_{EF} = -1/2F$
$T_{EF} = 3/2F -qx$
$M_{EF} = -1/2Fb +3/2Fx -1/2qx^2$

$N_{FG} = -1/2F$
$T_{FG} = -1/2F$
$M_{FG} = 1/2Fb -1/2Fx$