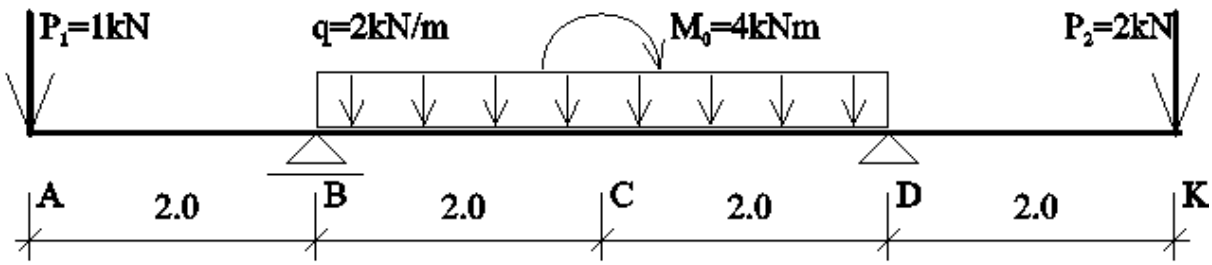
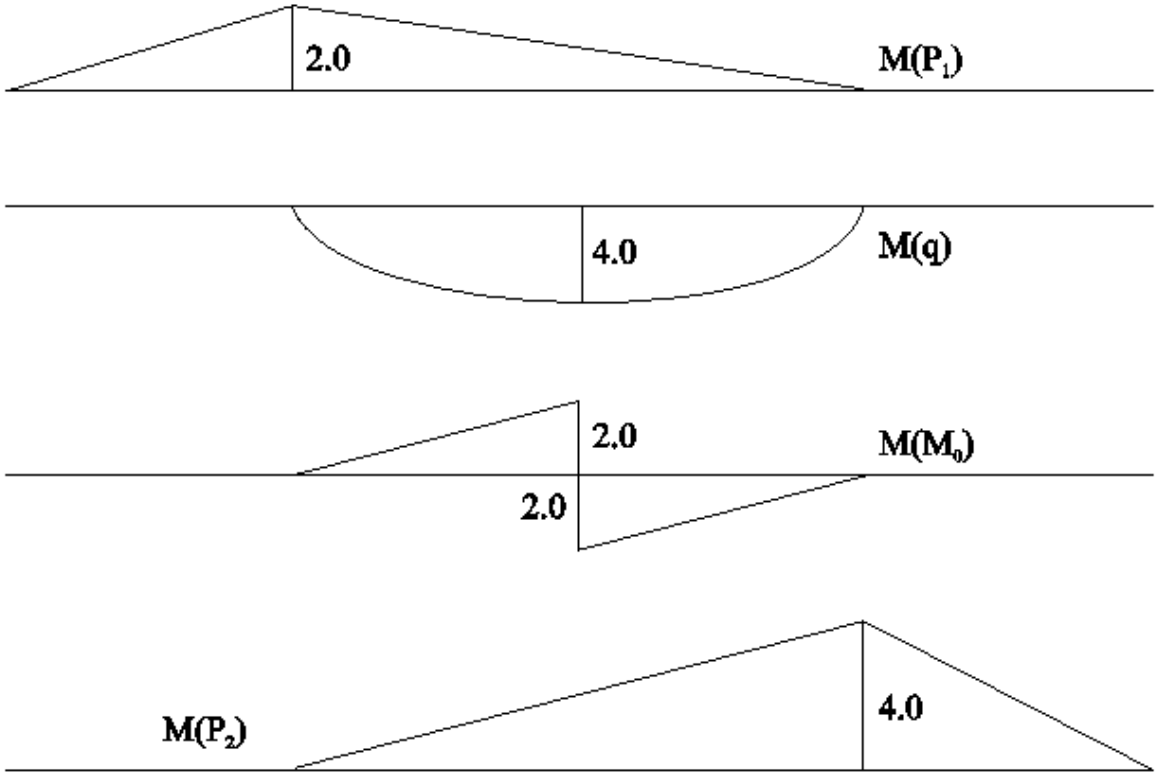
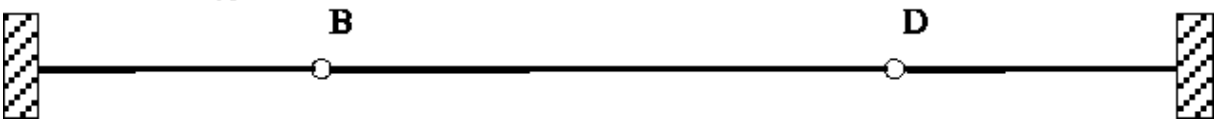
Obliczyć ugięcie i kąt ugięcia w przekroju K podanej belki metodą Mohra.
Zasada superpozycji: od każdego obciążenia osobno, potem sumować.

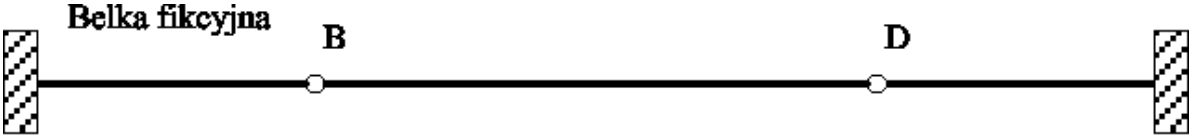


Wykresy momentów rzeczywistych od każdego obciążenia osobno [kNm]

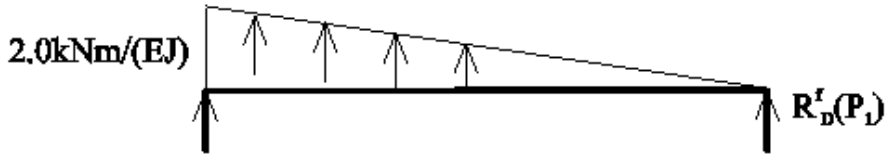


Belka fikcyjna

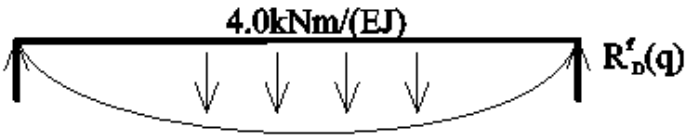




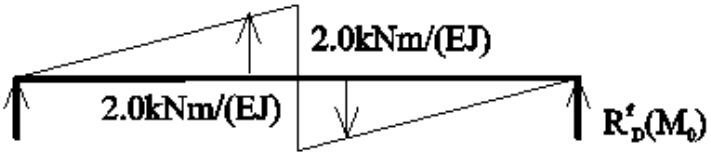
Obciążenia fikcyjne na belce fikcyjnej górnej (B-D):



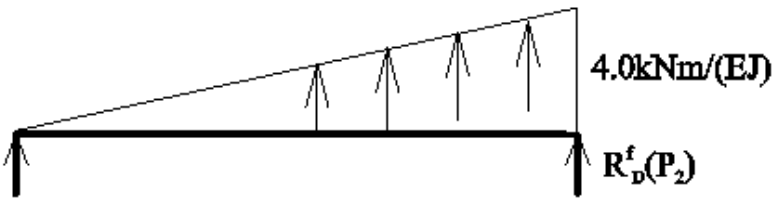
$\Sigma M^f(B)^s=0 \Rightarrow -4m*R^f_D(P_1)-0.5*2kNm/(EJ)*4m*(1/3)*4m=0$
$R^f_D(P_1)= -4/3\ kNm^2/(EJ)$



$\Sigma M^f(B)^s=0 \Rightarrow -4m*R^f_D(q)+(2/3)*4kNm/(EJ)*4m*2m=0$
$R^f_D(q)= 16/3\ kNm^2/(EJ)$

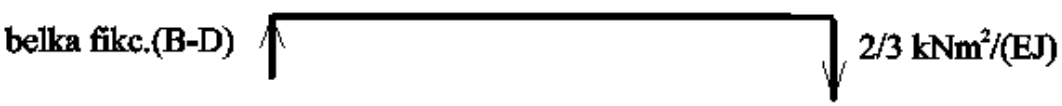


$-4m*R^f_D(M_0)-0.5*2kNm/(EJ)*2m*(2/3)*2m+0.5*2kNm/(EJ)*2m*(2+2/3)m=0$
$R^f_D(M_0)= 2/3\ kNm^2/(EJ)$

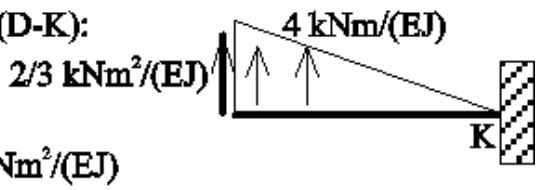


$\Sigma M^f(B)^s: -4m*R^f_D(P_2)-0.5*4kNm/(EJ)*4m*(2/3)*4m=0$
$R^f_D(P_2)= -16/3\ kNm^2/(EJ)$

$R^f_D= (-4/3+16/3+2/3-16/3)\ kNm^2/(EJ)= -2/3\ kNm^2/(EJ)$ (sumaryczne)



Sumaryczne obc. fikc. na dolną belkę fikc. (D-K):



$Q^f_K= \phi_K = (2/3+0.5*4*2)\ kNm^2/(EJ)= 14/3\ kNm^2/(EJ)$

$M^f_K = w_K = ((2/3)*2+0.5*4*2*(2/3)*2)\ kNm^3/(EJ)= 20/3\ kNm^3/(EJ)$