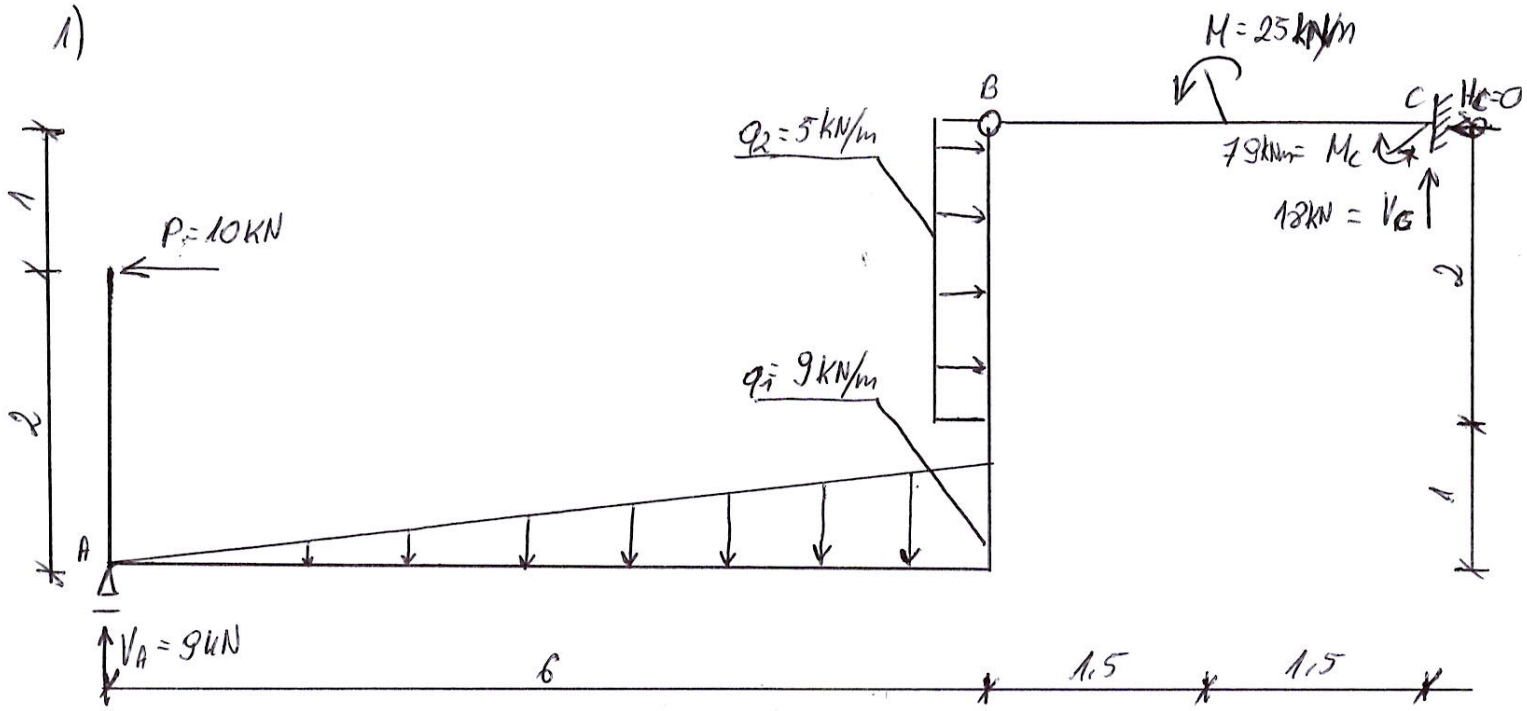
WYZNACZ REAKCJE PODPOROWE W PONIŻSZYCH RAMACH

1)



$\Sigma R_x = -10 + 5 \cdot 2 - H_C = 0 \; ; \; H_C = 0$

$\Sigma M_B^L = -5 \cdot 2 \cdot 1 - \frac{1}{2} \cdot 6 \cdot 9 \cdot \frac{1}{3} \cdot 6 + 10 \cdot 1 + V_A \cdot 6 = 0 \; ; \; V_A = 9\,kN$

$\Sigma R_y = 9 - \frac{1}{2} \cdot 6 \cdot 9 + V_C = 0 \; ; \; V_C = 18\,kN$

$\Sigma M_B^P = -25 - 18 \cdot 3 - M_C = 0 \; ; \; M_C = -79\,kNm$

spr. $\Sigma M_A = -10 \cdot 2 + \frac{1}{2} \cdot 9 \cdot 6 \cdot \frac{2}{3} \cdot 6 + 5 \cdot 2 \cdot 2 - 25 + 79 - 18 \cdot 9 = 0$

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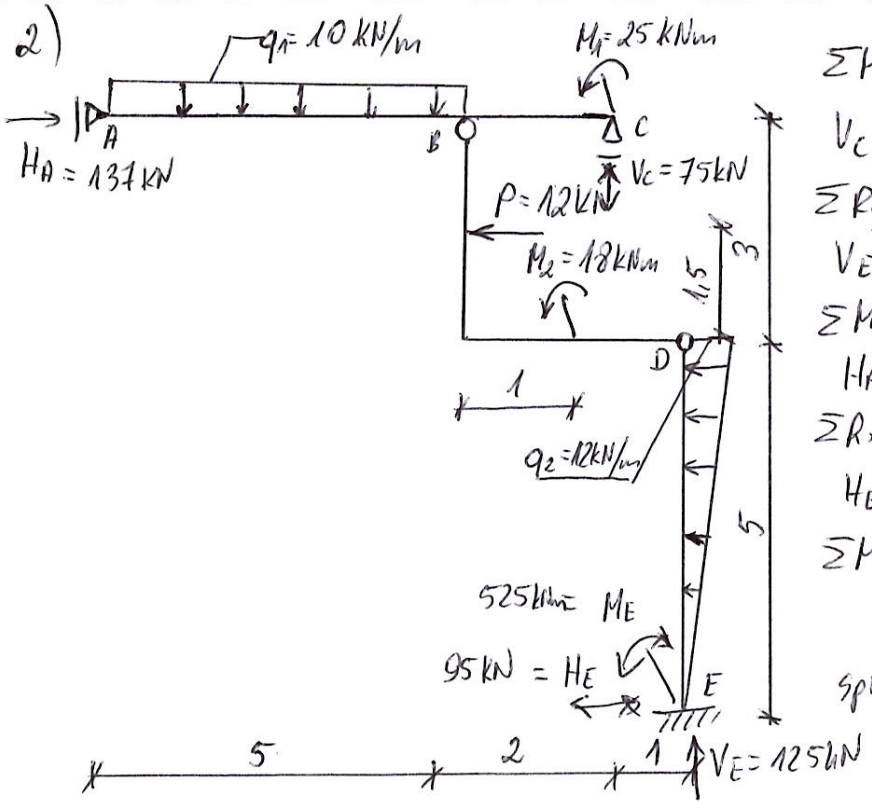
2)



$\Sigma M_B^q = -10 \cdot 5 \cdot 2{,}5 - 25 - V_C \cdot 2 = 0$

$V_C = -75\,kN$

$\Sigma R_y = -10 \cdot 5 - 75 + V_E = 0 \; ;$

$V_E = 125\,kN$

$\Sigma M_D^y = H_A \cdot 3 - 10 \cdot 5 \cdot 5{,}5 - 25 - \overbrace{12 \cdot 1{,}5}^{-75 \cdot 1} - 18 = 0$

$H_A = +137\,kN$

$\Sigma R_x = 137 - 12 - \frac{1}{2} \cdot 5 \cdot 12 + H_E = 0 \; ;$

$H_E = -95\,kN$

$\Sigma M_D^D = \frac{1}{2} \cdot 5 \cdot 12 \cdot \frac{1}{3} \cdot 5 + M_E + 95 \cdot 5 = 0$

$M_E = -525\,kNm$

spr: $\Sigma M_A = 10 \cdot 5 \cdot 2{,}5 - 25 + 75 \cdot 7 +$
$+ 12 \cdot 1{,}5 - 18 + \frac{1}{2} \cdot 12 \cdot 5 \left(5 \frac{1}{3} + 3\right) +$
$+ 95 \cdot 8 - 525 - 125 \cdot 8 = 0$