Remarks: See §6.3.1, page 219 till 223 and example 2 on page 223
Also see §5.3, page 168

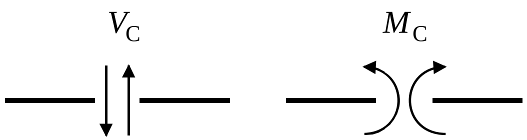
Replace the distributed load by its resultant on the part where the equilibrium is taken in consideration.

After calculating the support reactions the interaction forces in C follow from the equilibrium of one of the parts.

Between rigidly connected parts you've three interaction forces:

- A force in line with the beam. From the horizontal equilibrium it follows that this force is always zero here.
- A force perpendicular to the beam, called V_C here.
- A moment, called M_C here.

The positive directions for V_C and M_C



Answers:

1a. $A_h = 50$ kN (→) ; $A_v = 70$ kN (↑)
1b. $B_h = 50$ kN (←) ; $B_v = 90$ kN (↑)
1c. $N_C = -50$ kN ; $V_C = +30$ kN ; $M_C = -25$ kNm

2a. $A_h = 48$ kN (→) ; $A_v = 164$ kN (↑)
2b. $B_h = 48$ kN (←) ; $B_v = 188$ kN (↑)
2c. $N_C = -48$ kN ; $V_C = -12$ kN ; $M_C = +112$ kNm

3a. $A_h = 40$ kN (→) ; $A_v = 140$ kN (↑)
3b. $B_h = 40$ kN (←) ; $B_v = 100$ kN (↑)
3c. $N_C = -40$ kN ; $V_C = +60$ kN ; $M_C = -40$ kNm