Remarks: See §6.3.1, page 219 till 223 and example 2 on page 223

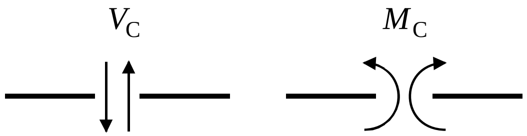
Replace the distributed load by its resultant on the part where the equilibrium is taken in consideration.

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. $A_h = 0$; $A_v = 36$ kN (↑)
1b. $B_v = 48$ kN (↑)
1c. $V_C = +3$ kN; $M_C = 84$ kNm

2a. $A_v = 44$ kN (↑)
2b. $B_h = 0$; $B_v = 8$ kN (↓)
2c. $V_C = -9$ kN; $M_C = -3$ kNm

3a. $A_v = 10{,}5$ kN (↑)
3b. $B_h = 0$; $B_v = 1{,}5$ kN (↓)
3c. $V_C = +2{,}83$ kN; $M_C = -3{,}28$ kNm

4a. $A_h = 0$; $A_v = 3{,}1$ kN (↑)
4b. $B_v = 4{,}9$ kN (↑)
4c. $V_C = +1{,}1$ kN; $M_C = +4{,}2$ kNm