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

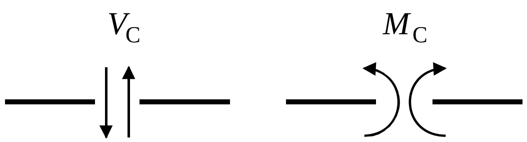
Replace the distributed load by its resultant on the part where the equilibrium is taken in consideration.

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/b. $A_h = 0$; $A_v = 10$ kN (↑); $B_v = 2$ kN (↑)
1c. $V_C = -2$ kN; $M_C = +6$ kNm

2a/b. $A_h = 0$; $A_v = 8$ kN (↑); $B_v = 4$ kN (↑)
2c. $V_C = -4$ kN; $M_C = +12$ kNm

3a/b. $A_h = 0$; $A_v = B_v = 18$ kN (↑);
3c. $V_C = -2$ kN; $M_C = +22$ kNm

4a/b. $A_h = 0$; $A_v = 21$ kN (↑); $B_v = 24$ kN (↑)
4c. $V_C = +1$ kN; $M_C = +31$ kNm

5a/b. $A_h = 0$; $A_v = 16$ kN (↑); $B_v = 16$ kN (↓)
5c. $V_C = -8$ kN; $M_C = 0$

6a/b. $A_h = 0$; $A_v = 18$ kN (↑); $B_v = 36$ kN (↑)
6c. $V_C = +14$ kN; $M_C = +50$ kNm