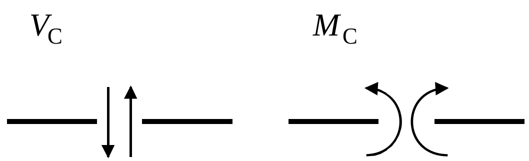
Remarks: See §5.1, page 154 till 162
And the examples 4 and 5 on page 160 and 161

Hints:

When the support reactions are calculated the interaction forces in C can be found when you free the left or right part. There are three kinds of interaction forces working between rigidly connected parts.

- Forces in line with the beam. Out of the horizontal equilibrium it follows that these forces are zero in each of the cases.
- Forces perpendicular to the beam , called V_C
- A moment, called M_C

for V_C and M_C *we've defined positive directions*:



Answers:

1a. $A_h = 0$; $A_v = 2$ kN (↑); $B_v = 2$ kN (↑)

1b. $V_C = +2$ kN; $M_C = +6$ kNm

2a. $A_h = 0$; $A_v = 3$ kN (↑); $B_v = 1$ kN (↑)

2b. $V_C = -1$ kN; $M_C = +5$ kNm

3a. $A_h = 0$; $A_v = 3$ kN (↑); $B_v = 1$ kN (↑)

3b. $V_C = -1$ kN; $M_C = -3$ kNm

4a. $A_h = 0$; $A_v = 8$ kN (↑); $B_v = 12$ kN (↑)

4b. $V_C = +3$ kN; $M_C = +24$ kNm

5a. $A_h = 0$; $A_v = 6$ kN (↑); $B_v = 8$ kN (↑)

5b. $V_C = 0$; $M_C = +41$ kNm

6a. $A_h = 0$; $A_v = 2$ kN (↑); $B_v = 3$ kN (↑)

6b. $V_C = +3$ kN; $M_C = +9$ kNm

7a. $A_h = 0$; $A_v = 2$ kN (↓); $B_v = 1$ kN (↑)

7b. $V_C = +2$ kN; $M_C = +8$ kNm

8a. $A_h = A_v = B_v = 0$

8b. $V_C = -2$ kN; $M_C = +6$ kNm