Remarks: See §9.3.1, page 337 till 351 and example 3 on page 346.

Answers:

a. $N^{(1)} = 0$
$N^{(2)} = +50$ kN
$N^{(3)} = +50$ kN
$N^{(4)} = -90$ kN
$N^{(5)} = N^{(6)} = +60$ kN
$N^{(7)} = 0$
$N^{(8)} = 0$

b. $N^{(1)} = +160$ kN
$N^{(2)} = -125$ kN
$N^{(3)} = -25$ kN
$N^{(4)} = -75$ kN
$N^{(5)} = N^{(6)} = +150$ kN
$N^{(7)} = +80$ kN
$N^{(8)} = -100$ kN

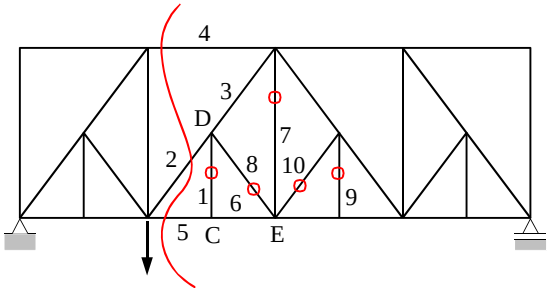
Remarks:

Here you have to calculate an extra force (member 8,9 or 10) to get to an answer or make a cut around a joint and use the equilibrium for that joint (joint C,D or E)

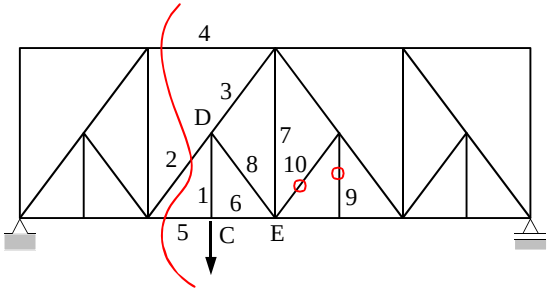
Calculation

Equilibrium of the part right or left of the given cut. → $N^{(2)}$, $N^{(4)}$ en $N^{(5)}$; equilibrium joint C → $N^{(1)}$ en $N^{(6)}$; equilibrium joint D → $N^{(3)}$ en $N^{(8)}$; and so on. See figures

Recognizing zero force-members may help; see §9.3.3



a.



b.