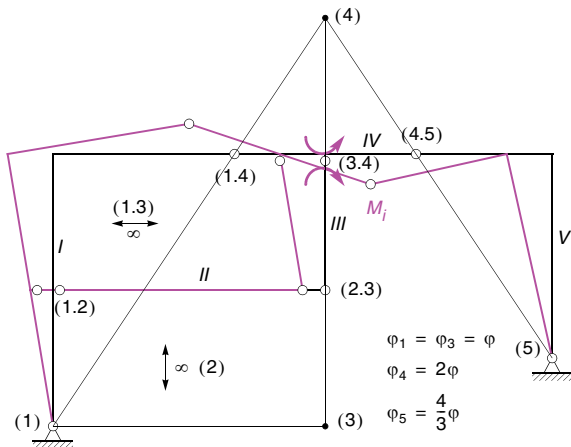
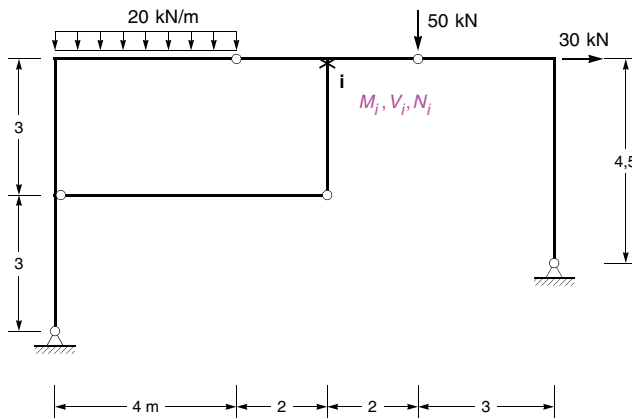
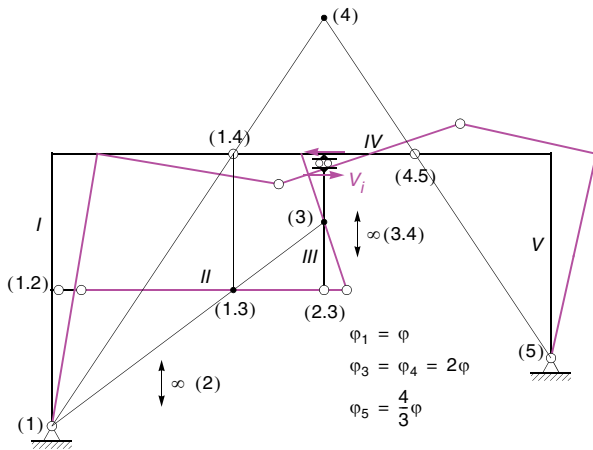


## Aufgabe 1



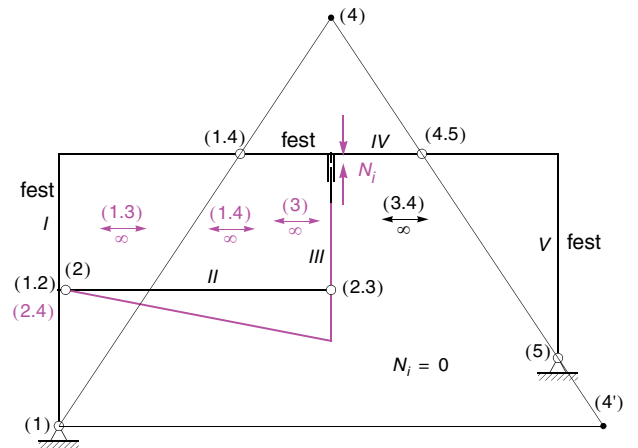
$$\sum \bar{W} = 0: -M_i \cdot \varphi - M_i \cdot 2\varphi - 20 \cdot 4 \cdot \varphi \cdot 2 + 50 \cdot 2\varphi \cdot 2 - 30 \cdot \varphi \cdot 6 = 0$$

$$\Rightarrow M_i = -46.666667$$

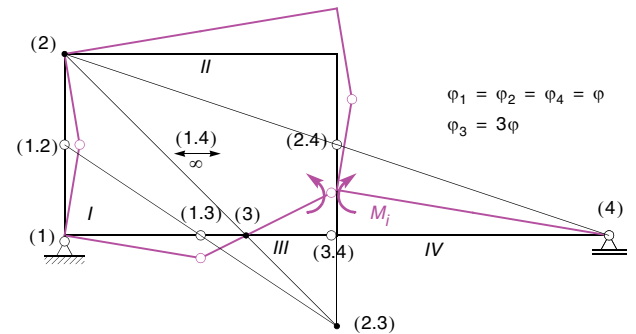
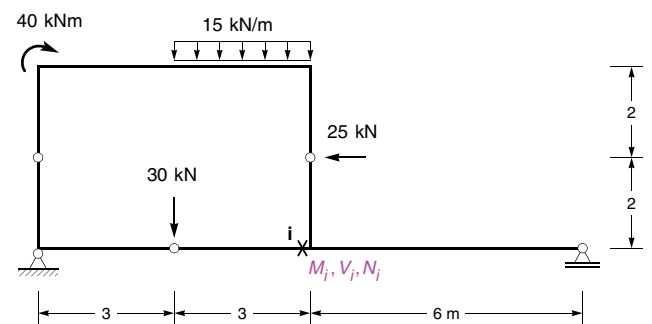


$$\sum \bar{W} = 0: -V_i \cdot 2\varphi \cdot 3 - V_i \cdot 2\varphi \cdot 1.5 + 20 \cdot 4 \cdot \varphi \cdot 2 - 50 \cdot 2\varphi \cdot 2 + 30 \cdot \varphi \cdot 6 = 0$$

$$\Rightarrow V_i = 15.555556$$

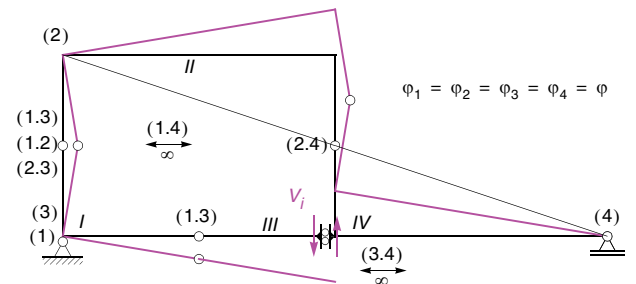


## Aufgabe 2



$$\sum \bar{W} = 0: M_i \cdot 3\varphi + M_i \cdot \varphi - 15 \cdot 3 \cdot \varphi \cdot 4.5 + 30 \cdot \varphi \cdot 3 - 25 \cdot \varphi \cdot 2 - 40 \cdot \varphi = 0$$

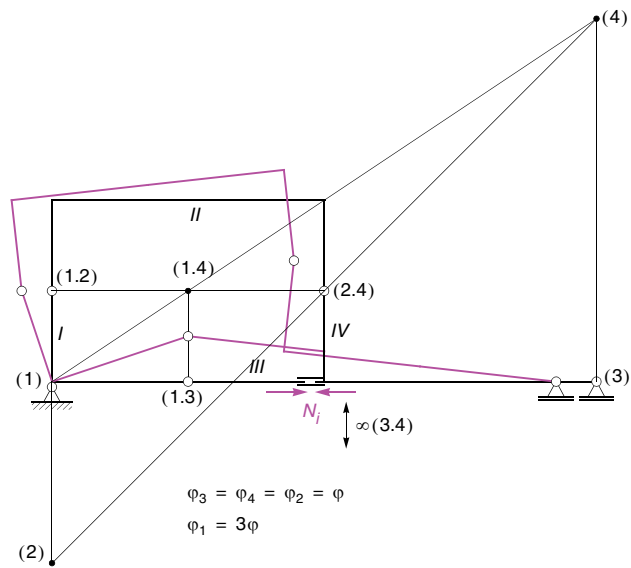
$$\Rightarrow M_i = 50.625$$



$$\sum \bar{W} = 0:$$

$$V_i \cdot \varphi \cdot 6 + V_i \cdot \varphi \cdot 6 - 15 \cdot 3 \cdot \varphi \cdot 4.5 + 30 \cdot \varphi \cdot 3 - 25 \cdot \varphi \cdot 2 - 40 \cdot \varphi = 0$$

$$\Rightarrow V_i = 16.875$$



$$\sum \bar{W} = 0: -N_j \cdot \varphi \cdot 8 - 15 \cdot 3 \cdot \varphi \cdot 4.5 - 30 \cdot 3\varphi \cdot 3 + 25 \cdot \varphi \cdot 6 - 40 \cdot \varphi = 0$$

$$\Rightarrow N_j = 45.3125$$