

Übung 2

gewählt	Randknotenmenge
(1, 0, -)	{(6, 2, 1), (2, 3, 1)}
(6, 2, 1)	{(2, 3, 1), (7, 5, 6)}
(2, 3, 1)	{(3, 5, 2), (7, 4, 2)}
(7, 4, 2)	{(3, 5, 2), (4, 11, 7), (5, 6, 7)}
(3, 5, 2)	{(4, 11, 7), (5, 6, 7)}
(5, 6, 7)	{(4, 8, 5)}
(4, 8, 5)	\emptyset

Zielknoten	Pfadlänge	kürzester Pfad
1	0	[1]
6	2	[1, 6]
2	3	[1, 2]
7	4	[1, 2, 7]
3	5	[1, 2, 3]
5	6	[1, 2, 7, 5]
4	8	[1, 2, 7, 5, 4]

Übung 3 (b)

$$D_G^{(1)} = \begin{pmatrix} 0 & \infty & 3 & \infty & \infty & \infty & \infty \\ 8 & 0 & 11 & 2 & \infty & \infty & \infty \\ \infty & \infty & 0 & \infty & \infty & \infty & \infty \\ 4 & \infty & 7 & 0 & \infty & 3 & 6 \\ \infty & 4 & \infty & 7 & 0 & \infty & 15 \\ \infty & \infty & 3 & \infty & \infty & 0 & 2 \\ \infty & \infty & \infty & \infty & \infty & \infty & 0 \end{pmatrix}$$

Änderungen gegenüber mA_G :

$(2, 3, 11), (4, 3, 7)$

Übung 3 (b)

$$D_G^{(2)} = \begin{pmatrix} 0 & \infty & 3 & \infty & \infty & \infty & \infty \\ 8 & 0 & 11 & 2 & \infty & \infty & \infty \\ \infty & \infty & 0 & \infty & \infty & \infty & \infty \\ 4 & \infty & 7 & 0 & \infty & 3 & 6 \\ 12 & 4 & 15 & 6 & 0 & \infty & 15 \\ \infty & \infty & 3 & \infty & \infty & 0 & 2 \\ \infty & \infty & \infty & \infty & \infty & \infty & 0 \end{pmatrix} = D_G^{(3)}$$

Änderungen gegenüber mA_G :

$(2, 3, 11), (4, 3, 7), (5, 1, 12), (5, 3, 15), (5, 4, 6)$

Übung 3 (d)

[illegible]

Übung 4 (a)

$$D_{G_1}^{(3)} = \begin{pmatrix} 0 & 6 & 3 & 6 & 12 \\ 4 & 0 & 2 & 5 & 6 \\ 2 & 3 & 0 & 3 & 9 \\ \infty & \infty & \infty & 0 & \infty \\ 9 & 10 & 7 & 4 & 0 \end{pmatrix}$$

Übung 4 (c)

$$mA_{G_2} = \begin{pmatrix} 0 & 30 & 15 & 20 & \infty \\ \infty & 0 & 5 & \infty & \infty \\ \infty & \infty & 0 & 3 & \infty \\ \infty & 8 & \infty & 0 & \infty \\ \infty & \infty & 20 & 2 & 0 \end{pmatrix} = D_{G_2}^{(0)} = D_{G_2}^{(1)}$$

$$D_{G_2}^{(2)} = \begin{pmatrix} 0 & 30 & 15 & 20 & \infty \\ \infty & 0 & 5 & \infty & \infty \\ \infty & \infty & 0 & 3 & \infty \\ \infty & 8 & 13 & 0 & \infty \\ \infty & \infty & 20 & 2 & 0 \end{pmatrix}$$

Übung 4 (c)

$$D_{G_2}^{(3)} = \begin{pmatrix} 0 & 30 & 15 & 18 & \infty \\ \infty & 0 & 5 & 8 & \infty \\ \infty & \infty & 0 & 3 & \infty \\ \infty & 8 & 13 & 0 & \infty \\ \infty & \infty & 20 & 2 & 0 \end{pmatrix}$$
$$D_{G_2}^{(4)} = \begin{pmatrix} 0 & 26 & 15 & 18 & \infty \\ \infty & 0 & 5 & 8 & \infty \\ \infty & 11 & 0 & 3 & \infty \\ \infty & 8 & 13 & 0 & \infty \\ \infty & 10 & 15 & 2 & 0 \end{pmatrix} = D_{G_2}^{(5)} = D_{G_2}$$