

Blatt 5

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28. November 2017

1 Aufgabe 17:

1.1 Erste Iteration

Cluster 1:

[1 ,6]

Cluster 2:

[1 ,4]

[1 ,5]

[3 ,2]

[3 ,3]

[4 ,1]

Cluster 3:

[5 ,1]

[6 ,2]

[6 ,3]

[8 ,4]

[8 ,5]

[8 ,6]

Aktualisieren:

$$\mu_1 = [1 ,6]$$

$$\mu_2 = [1 \frac{2}{5}, 15/5]$$

$$\mu_3 = [4 \frac{1}{6}, 21/6]$$

1.2 Zweite Iteration

Cluster 1:

[1 ,6]

[1 ,5]

Cluster 2:

[1 ,4]

[3 ,2]

[3 ,3]

[4 ,1]

Cluster 3:

[5 ,1]

[6 ,2]

[6 ,3]

[8 ,4]

$$\begin{bmatrix} 8,5 \\ 8,6 \end{bmatrix}$$

Aktualisieren:

$$\mu_1 = [1, 5.5]$$

$$\mu_2 = [1 \frac{1}{4}, 10/4]$$

$$\mu_3 = [4 \frac{1}{6}, 21/6]$$

1.3 Dritte Iteration

Cluster 1:

$$[1, 6]$$

$$[1, 5]$$

$$[1, 4]$$

Cluster 2:

$$[3, 2]$$

$$[3, 3]$$

$$[4, 1]$$

$$[5, 1]$$

Cluster 3:

$$[6, 2]$$

$$[6, 3]$$

$$[8, 4]$$

$$[8, 5]$$

$$[8, 6]$$

Aktualisieren:

$$\mu_1 = [1, 5]$$

$$\mu_2 = [1 \frac{5}{4}, 7/4]$$

$$\mu_3 = [3 \frac{6}{5}, 20/5]$$

1.4 Vierte Iteration

Cluster 1:

$$[1, 6]$$

$$[1, 5]$$

$$[1, 4]$$

Cluster 2:

$\begin{bmatrix} 3, 2 \\ 3, 3 \\ 4, 1 \\ 5, 1 \\ 6, 2 \end{bmatrix}$

Cluster 3:

$\begin{bmatrix} 6, 3 \\ 8, 4 \\ 8, 5 \\ 8, 6 \end{bmatrix}$

Aktualisieren:

$$\mu_1 = [1, 5]$$

$$\mu_2 = [2 \frac{1}{5}, 10/5]$$

$$\mu_3 = [3 \frac{0}{4}, 18/4]$$

1.5 Fünfte Iteration

Cluster 1:

$\begin{bmatrix} 1, 6 \\ 1, 5 \\ 1, 4 \end{bmatrix}$

Cluster 2:

$\begin{bmatrix} 3, 2 \\ 3, 3 \\ 4, 1 \\ 5, 1 \\ 6, 3 \\ 6, 2 \end{bmatrix}$

Cluster 3:

$\begin{bmatrix} 8, 4 \\ 8, 5 \\ 8, 6 \end{bmatrix}$

Aktualisieren:

$$\mu_1 = [1, 5]$$

$$\mu_2 = [2 \frac{7}{6}, 12/6]$$

$$\mu_3 = [2 \frac{4}{3}, 15/3]$$