Correct solution for exercise 1c.

The i-th Lagrangian multiplier is given by:

$$\lambda_i = \left(\sum_{j=1}^{K} \left(q \cdot d(\boldsymbol{x}_i, \boldsymbol{\mu}_j) \right)^{\frac{1}{1-q}} \right)^{1-q}$$

Substituting λ leads to:

$$\begin{aligned}
c_{mn} &= \left(\frac{\lambda_m}{q \cdot d(\boldsymbol{x}_m, \boldsymbol{\mu}_n)} \right)^{\frac{1}{q-1}} \\
&= \frac{\left(\left(\sum_{j=1}^{K} \left(q \cdot d(\boldsymbol{x}_m, \boldsymbol{\mu}_j) \right)^{\frac{1}{1-q}} \right)^{1-q} \right)^{\frac{1}{q-1}}}{\left(q \cdot d(\boldsymbol{x}_m, \boldsymbol{\mu}_n) \right)^{\frac{1}{q-1}}} \\
&= \frac{\left(\sum_{j=1}^{K} \left(q \cdot d(\boldsymbol{x}_m, \boldsymbol{\mu}_j) \right)^{\frac{1}{1-q}} \right)^{-1}}{\left(\left(q \cdot d(\boldsymbol{x}_m, \boldsymbol{\mu}_n) \right)^{\frac{1}{1-q}} \right)^{-1}} \\
&= \frac{\left(q \cdot d(\boldsymbol{x}_m, \boldsymbol{\mu}_n) \right)^{\frac{1}{1-q}}}{\sum_{j=1}^{K} \left(q \cdot d(\boldsymbol{x}_m, \boldsymbol{\mu}_j) \right)^{\frac{1}{1-q}}} \\
&= \frac{||\boldsymbol{x}_m - \boldsymbol{\mu}_n||_2^{\frac{2}{1-q}}}{\sum_{j=1}^{K} ||\boldsymbol{x}_m - \boldsymbol{\mu}_j||_2^{\frac{2}{1-q}}}
\end{aligned}$$