

ORIGIN := 1

$\gamma_{1inf} := 2.01$ $\gamma_{2inf} := 2.35$

$\Lambda_{12} := 1$ $\Lambda_{21} := 1$

Given

$$\ln(\gamma_{1inf}) = -\ln(\Lambda_{12}) + 1 - \Lambda_{21}$$

$$\ln(\gamma_{2inf}) = -\ln(\Lambda_{21}) + 1 - \Lambda_{12}$$

$$\begin{pmatrix} \Lambda_{12} \\ \Lambda_{21} \end{pmatrix} := \text{Find}(\Lambda_{12}, \Lambda_{21}) = \begin{pmatrix} 0.807 \\ 0.516 \end{pmatrix}$$

$$\gamma(x) := \begin{pmatrix} \gamma_1 \leftarrow \exp \left[- \left[\ln(x_1 + \Lambda_{12} \cdot x_2) + x_2 \cdot \left(\frac{\Lambda_{21}}{x_2 + \Lambda_{21} \cdot x_1} - \frac{\Lambda_{12}}{x_1 + \Lambda_{12} \cdot x_2} \right) \right] \right] \\ \gamma_2 \leftarrow \exp \left[- \left[\ln(x_2 + \Lambda_{21} \cdot x_1) + x_1 \cdot \left(\frac{\Lambda_{12}}{x_1 + \Lambda_{12} \cdot x_2} - \frac{\Lambda_{21}}{x_2 + \Lambda_{21} \cdot x_1} \right) \right] \right] \\ \begin{pmatrix} \gamma_1 \\ \gamma_2 \end{pmatrix} \end{pmatrix}$$

$$T := 328.2 \quad y := \begin{pmatrix} 0.87 \\ 0.13 \end{pmatrix}$$

$$P1 := 10 \quad \frac{6.23182 \cdot \frac{1236.700}{T-55.92}}{10} = 48.956$$

$$P2 := 10 \quad \frac{6.50091 \cdot \frac{1275.197}{T-97.96}}{10} = 9.17$$

$$x := \begin{pmatrix} 0.5 \\ 0.5 \end{pmatrix} \quad P := 31.2$$

Given

$$P \cdot y_1 = P1 \cdot x_1 \cdot \gamma(x)_1$$

$$P \cdot y_2 = P2 \cdot x_2 \cdot \gamma(x)_2$$

$$x_1 + x_2 = 1$$

$$\begin{pmatrix} x \\ p \end{pmatrix} := \text{Find}(x, P)$$

$$x = \begin{pmatrix} 0.575 \\ 0.425 \end{pmatrix} \quad P = 37.793$$