

ORIGIN := 1

$$\underline{A} := \begin{pmatrix} 9.2131 \\ 9.2164 \\ 9.2535 \end{pmatrix} \quad \underline{B} := \begin{pmatrix} 2477.07 \\ 2697.55 \\ 2911.32 \end{pmatrix} \quad \underline{C} := \begin{pmatrix} -39.94 \\ -48.78 \\ -56.51 \end{pmatrix} \quad P := 0.8$$

Bubble Point Temperature

$$\underline{x} := \begin{pmatrix} 0.50 \\ 0.45 \\ 0.05 \end{pmatrix}$$

$$\underline{T} := \sum_{i=1}^3 \left[x_i \cdot \left(\frac{B_i}{A_i - \ln(P)} - C_i \right) \right] = 319.957$$

Given

$$P = \sum_{i=1}^3 \left(x_i \cdot \exp \left(A_i - \frac{B_i}{C_i + T} \right) \right)$$

$$\text{Find}(T) = 314.926$$

Dew Point Temperature

$$\underline{y} := \begin{pmatrix} 0.50 \\ 0.45 \\ 0.05 \end{pmatrix}$$

$$\underline{T} := \sum_{i=1}^3 \left[y_i \cdot \left(\frac{B_i}{A_i - \ln(P)} - C_i \right) \right] = 319.957$$

Given

$$P = \frac{1}{\sum_{i=1}^3 \frac{y_i}{\exp \left(A_i - \frac{B_i}{C_i + T} \right)}}$$

$$\text{Find}(T) = 326.579$$